

# The Australasian MANUFACTURER

SERVING ALL INDUSTRY

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Saturday, July 1, 1950.



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# AFTER BUSINESS HOURS

Here, There and Everywhere

(By William Beecham.)

The views expressed in articles published in this section are those of the contributors and not necessarily those of "The Australasian Manufacturer." They are selected for their interest value, whether controversial or not, and the comments of readers on the subject discussed are always welcomed by the Editor.

## CREDIT.

The instalment plan  
Is here to stay,  
But not the things  
We buy that way.

Sweater girls make excellent teachers—they outline things so clearly.

Dealing with the use of a health programme in industry, our executive quoted in these columns last month adds: "I think I stated before that the non-occupational time lost in industry is fourteen times greater than the time lost from occupational causes. I firmly believe

that the control of the non-occupational time lost depends largely on influencing human behaviour, the habits of living; and also that about 85 per cent. of industrial accidents are caused by human failure, the habits of living at work. Both items can be controlled by the same method to a large degree. Throughout, consistent employee health and safety education is the answer. It will pay just as large production dividends as equivalent time spent in job training and in machinery maintenance. How many plants maintain employees as well as the plant machinery is maintained?"

## TAXES.

I'm all for higher taxes.  
I think they would be fine.  
Provided that they start in  
The bracket over mine.

Time: The interval between pay days.

Our executive continues: "Thorough safety and health education must be co-ordinated with the activities of the safety engineer, the personnel director, the industrial physician and the factory nurse. Such co-ordination will provide the essential link—education—in effective maintenance of productive manpower. Such a programme should be carried out by a committee of both management and employees. Through its correct operation it should secure the interest and the co-operation of all employees in the business of keeping physically fit. As physical fitness improves it will be found that production improves and morale improves—because employees are shown that it is to the personal benefit of themselves and their families to keep safe and well at home as well as at work and at play; to keep safe and well for 24 hours a day. But how to keep safe and well must be shown in an easily understood manner. You must sell better habits of living to your employees and to their families."

## RESTRICTED EDITION.

From Junior's glum, despondent look  
Undoubtedly you've guessed.  
His life is just an open book  
That's frequently suppressed.

Some girls live in elaborate apartments outside the city limits—others live in the city proper.

More reasons why editors go insane: "Swinging a magnum of champagne against her massive side, Miss Hope cried, 'God speed the Leviathan.'" (A monthly magazine) . . . "By train and boat the second class return fare for a Continental tour is £24/10/-; with a birth in the Wagon de Lit it is £14/7/6 extra, but it makes the journey a pleasure." (Daily newspaper) . . . "The rain

descends with the force of water from a fire hose." (Country newspaper) . . . "She had tight bridesmaids at the ceremony." (Country newspaper) . . . "The members of the church met with the pastor in bed . . . and had a lovely meeting; reports were good; amount £15/10/-" (Church Magazine).

"Printing is an integral part of the life of a modern community. It touches each individual closely throughout his existence. His birth certificate, his marriage lines, and the last certificate of all are each on a printed form . . . Aspirations are moulded and opinions formed, governments are elected and laws made, justice is administered and statesmen indicted, kings are enthroned and empires crumble, through the all-powerful medium of the printed word . . . The radio, the screen, and now television, though they are all used to carry their varying message to the people, can never replace printing, for they lack the one vital thing—permanence. The spoken word is soon forgotten. The printed word is there always for constant reference." — "Printing — The Career That Beckons."

They Said: about Justice—"The weakest arm is strong enough that strikes with the sword of Justice" (John Webster) . . . "We love justice greatly, and just men but little" (Joseph Roux) . . . "Justice is too good for some people and not good enough for the rest" (Norman Douglas) . . . "The administration of justice is the firmest pillar of government" (George Washington) . . . "Delay of justice is injustice" (W. S. Landon) . . . "That which is unjust can really profit no one; that which is just can really harm no one" (Henry George).

A little girl was talking to her mother. "Oh, Mama, I saw the nicest man to-day"

"Who was he, dear?"  
"He was the garbage man, Mama"

"And why was he so nice?"  
"Well, Mama, he was carrying our can of garbage on his head out to the wagon. While he had

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It on his head the bottom came out and the garbage fell all over him. And do you know what—he just stood still and talked to God for a while."

Turning back the clock is often a fascinating occupation. Looking through a copy of *Whitaker's Almanack* for 1903 I find among the advertisements the following: The Hotel Cecil, single bedrooms from 6/- a day; breakfast from 2/- . . . Tranter's Hotel, bedroom 2/-; breakfast 1/- . . . Strong, useful blankets, 7/6 pair; white or coloured quilts, 2/11 each . . . Stallard's very choice old Scotch Whisky, 21/6 per gallon; 46/- per dozen bottles . . . W. Drake's perfect shirt, 4/6 each, 28/- for six; waterproof tweed overcoats, 35/-; tweed suits, 55/- . . . Donegal homespun, 2/- yard; hand-knitted socks, 10½d. pair; flannel tweeds, 1/6 yard . . . Coffee, 1/2 lb.; Tea, 1/4 lb. . . Bradford's New Patent

Washing Machine, £2/10/- . . . Champagne (extra dry) 48/- per dozen bottles; burgundy 14/- per dozen bottles . . . "Mrs. Beeton's Household Management" (about 1,700 pages), 1/6 . . . But some things were much as they are to-day, for in an advertisement for a cooking stove I note the following testimonial: "The Treasure Range has saved me £6 during the coal strike."

### At Random

A yawn is an opening made by a bore.—B. & K. Platter Chatter.

Optimist: A man who has not read even the front page of a newspaper for the past few years.—Pourquoi Pas? Brussels.

When the 2nd man appeared on earth, the rights of the 1st were cut in half. Now divide yours by the total population and that explains everything.

A gentleman is a man who holds the door open for his wife while she carries in a load of groceries.

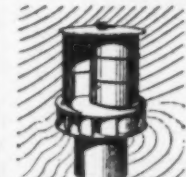
The teacher had written 92.7 on the blackboard and, to show the effect of multiplying by 10, rubbed out the decimal point. She then turned to the class and said: "Now, Alfred, where is the decimal point?"

Alfred replied, without hesitation, "On the eraser."

### I Laughed At This One.

I suggested to my 8-year-old son that he give up something for Lent, something that would really hurt, like candy. The boy hesitated, and then asked me what his dad and I were giving up. I replied, "Liquor." The boy objected, "Before dinner I saw you and daddy drinking something." "That was wine," I answered. "We gave up hard liquor." The boy thought for a while and then said, "Well, I think I'll give up hard candy." — "Times-Picayune New Orleans States."

Ocean: Huge body of water surrounded entirely by rumours of everlasting peace.—"Philnews."



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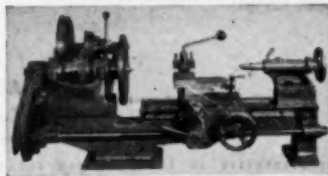
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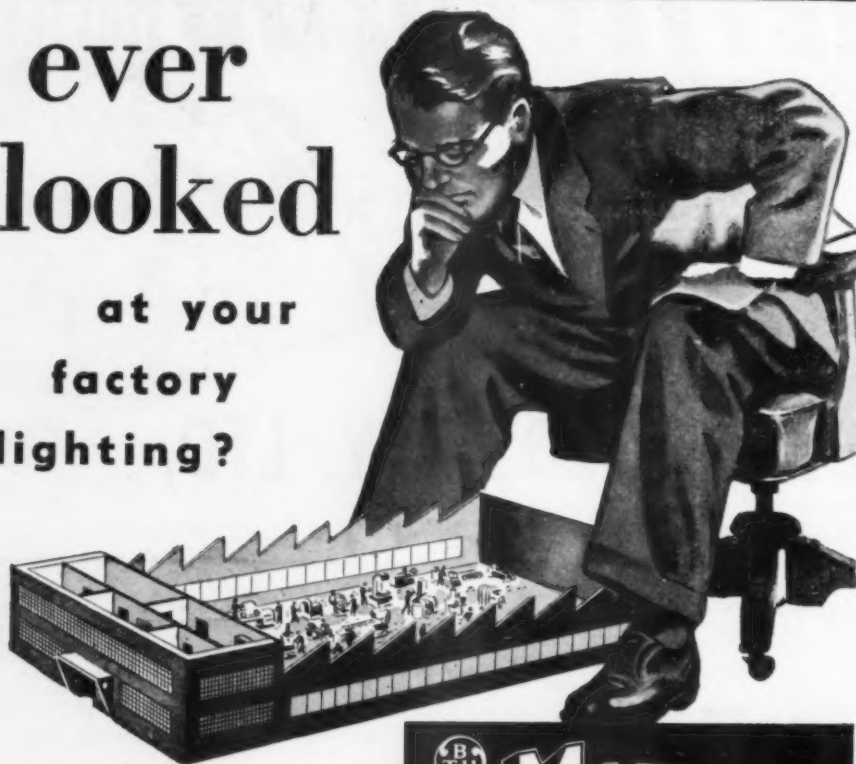
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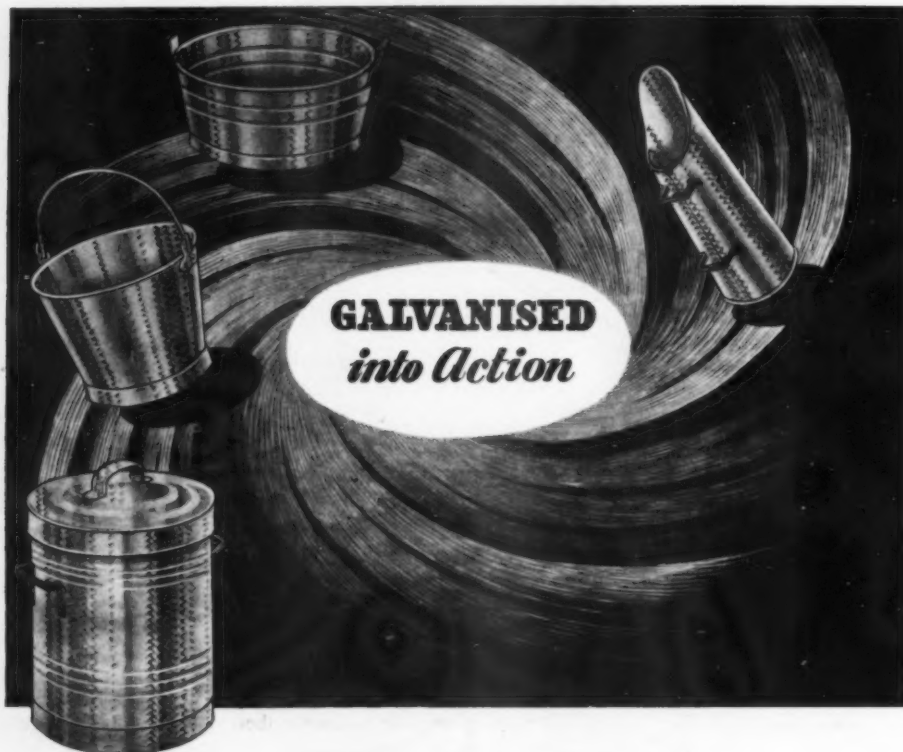
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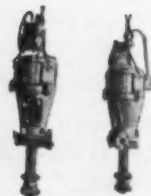


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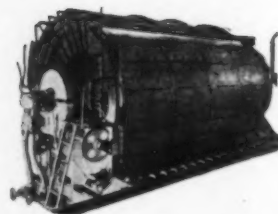
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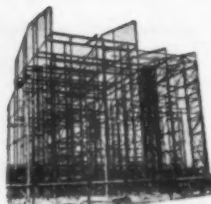
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Section showing Skip Hoist and Weighbridge Conveyor Steelwork for the French Nickel Co., New Caledonia.



Steel Construction of Sulphuric Acid Plant for Sulphide Corporation, N.S.W.

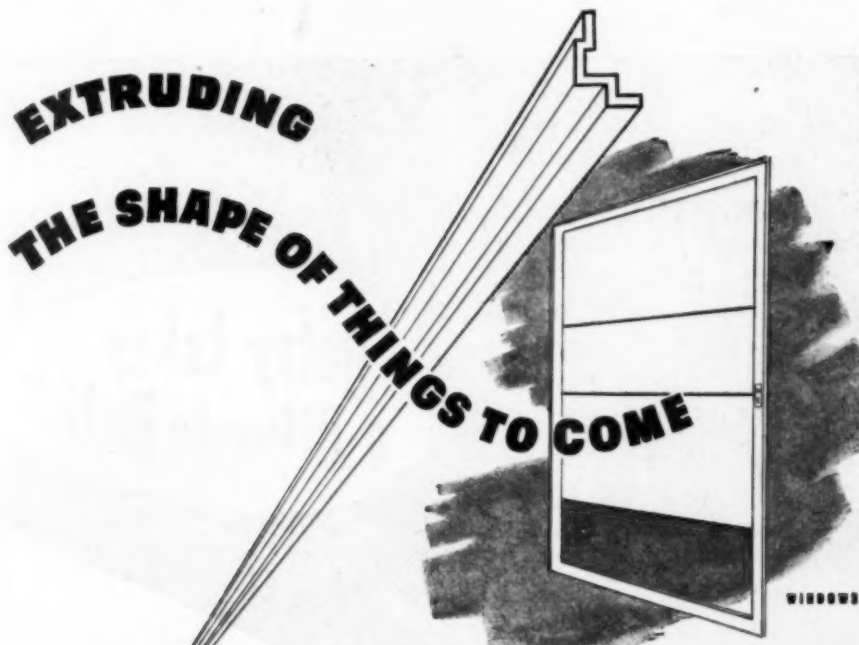


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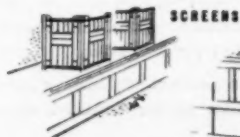
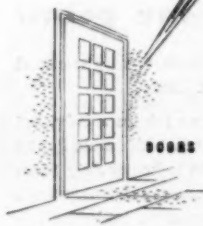
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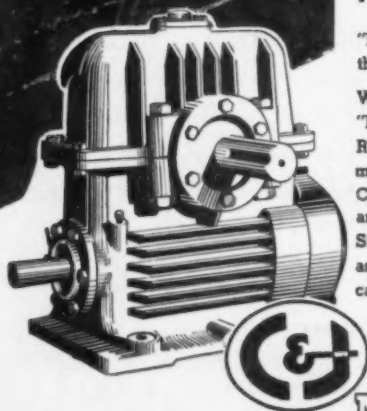
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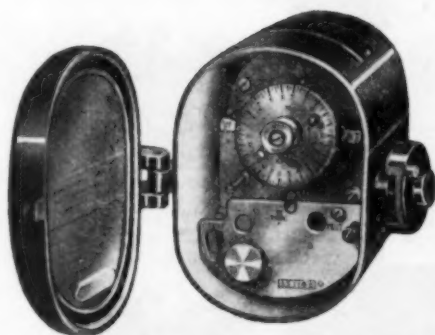
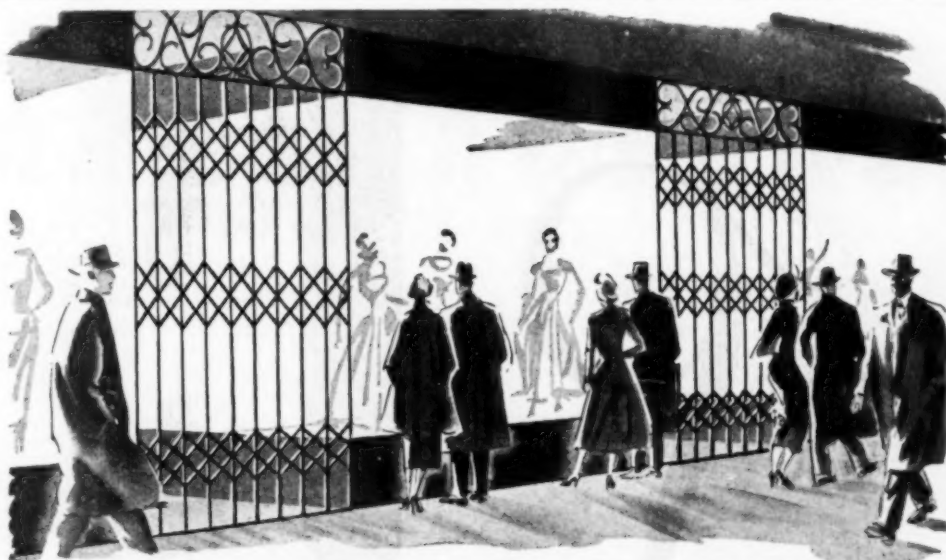


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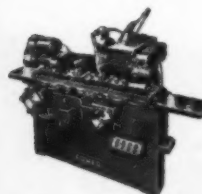
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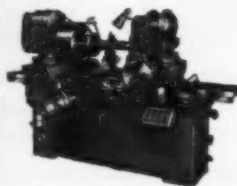
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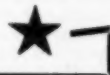
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PAGE FIFTEEN JULY 1, 1950.



## Manufacturing Industries Forge Ahead

No publication has recorded more graphically the amazing forward steps being taken by the manufacturing industries of this nation than does the Annual Number of "The Australasian Manufacturer" just off the press. From its striking four-colour cover to the last of its pages, it literally teems with information concerning every phase of the vast industrial scene. Heads of Governments, heads of industries, and heads of manufacturers' organisations vie with one another in detailing the progress which characterises every department of secondary production.

**C**ONGRATULATIONS on the high standard attained by the latest Annual Number pour into "The Manufacturer" organisation, not only from every part of the Commonwealth, but also from every section of the industrial and commercial communities.

This widespread enthusiasm derives from the fact that the contents of the publication are as varied and as interesting as the industries whose progress is publicised. This is manifestly evident from even a brief study of the following literary contributions, contributions additional to those from the pen of the Prime Minister; the Minister for National Development; the State Premiers; the Presidents of the Associated Chamber and of the State bodies, and leading industrialists, to which reference was made in these columns last week:—

"The Community, the Nation, and the World, and the Scientist", by Sir Herbert Gepp, President, the Royal Australian Chemical Institute.

"Present Position of Australia's Textile Dyeing, Printing, and Finishing Industries".

"Fan Engineering—A Notable Aid to Australian Industry", by George H. Vincent, M.I.H.V.E., Vincent Ventilating and Air Conditioning Company.

"Radio Receiver Industry".

"Wealth from the Snowy River"—Electrical Distribution.

"Nata' Co-operative Testing in the Service of Industry".

"Australasian Paper and Paper Board Industry", A Review by the Commonwealth Division of Industrial Development.

"Is the Cost Accountant Necessary in Successful Production?", by W. D. Scott, President, Australian Institute of Cost Accountants.

"Libraries and the Manufacturer", by G. C. Remington, Deputy Chairman, Library Board of New South Wales.

"War-time Factories with a Peacetime Future", Department of Industrial Development.

"Photo-electric Instruments Assist Industry", by G. E. Tassicker, A.M.I.R.E. Aust., Thomas Optical and Scientific Co. Pty. Ltd.

"Absorbing New Australians in Industry", Commonwealth Department of Information.

"Farm Implements", by B. R. Sharp, Sales Director, H. V. McKay-Massey Harris Pty. Ltd.

"Welding Developments", by W. T. Bennett, General Manager, Oerlikon Mfg. Ltd.

The circulation of this 1950 issue is destined to reach record levels. For already application has been made by some of the leading Government, industrial, and banking institutions for greatly increased numbers for despatch to clients at home and abroad, individual demands touching the hundred mark.

The reception accorded the Annual in manufacturing circles in Australia unquestionably will have its counter-part in industrial circles overseas. For the whole world to-day watches with interest the steps being taken by Australia to win for herself an enduring place among the great industrial nations of the age.

## Homes to Attract Factory Workers

Because of the world's shortage of manpower, leaders of many of the world's most important manufacturing organisations are devising ways and means of attracting to their individual undertakings men and women workers skilled in the various industrial techniques. One of the most effective of the many effective plans in operation is the provision of workers' homes, homes planned and built to meet their specific needs and available at a figure within their capacity to pay.

**A** NUMBER of Australia's foremost enterprises have, for some years past, pursued a policy of worker-home-building, a policy which has brought in its train eminently satisfactory results.

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open space, is being converted into an up-to-date, thriving, and self-contained garden suburb. The vast scheme envisages the ultimate construction of homes for six hundred workers and their families, homes replete with the most modern of to-day's modern conveniences.

The houses are of two types, timber and pre-cast concrete. Each unit comprises three bedrooms; lounge and dinette; kitchen; bathroom; and laundry. Special features are built-in cupboards, shelves, drawers, wire doors and screens, and hot water services. The timber house is to cost £2,100, and the expected cost of the pre-cast concrete is £2,400.

On announcement of the plan, upwards of one hundred of the company's factory workers formed the Deer Park (No. 1) Co-operative Housing Society. It must here be pointed out that, although the company is giving full encouragement to the scheme, the existing society is completely independent of the company's administration and is financed by a trading bank under a State Government guarantee. A minimum cash deposit of £100 is required for the timber houses, the financial arrangements including £1,500 on the first mortgage to the society, and the balance on the second mortgage to I.C.I. A maximum of £500 on the second mortgage is lent by the company to an employee at a nominal interest of 4 per cent. per annum. However, with reductions

of principal of £25 granted a year and interest chargeable only on the balance, no interest, in effect, is chargeable at all. The plan works along the following lines. The second mortgage is reduced at no cost to the employee at the rate of £25 a year of service with the company from the date of purchase, with a maximum reduction of £250. No reduction is granted, however, until the employee has had two years' service with I.C.I. after purchase of his home. Repayment of the balance of this second mortgage, including interest as already quoted, is to be made at the end of ten years in a lump sum by a transfer of the employee's credit in the company's provident fund, or by cash, if so desired.

It is interesting to add that a similar co-operative housing society was formed and registered recently by the employees of H. V. McKay-Massey Harris Pty. Ltd., Sunshine, Victoria.

Details of these interesting and highly significant projects are published by "The Manufacturer", first, to acquaint Australian industrialists generally with the developments which are taking place in this particular regard, and second, to let the world know that the industrialists of this Commonwealth, like their fellow-industrialists in other lands, are using their best endeavours to help the worker to acquire that best of good things—a home of his own.

# Pithy Jottings of Industry and Industrialists

## "MANUFACTURER" IN-AUGURATES MICROFILM SERVICE.

"The Manufacturer" has pleasure in informing its readers that it has concluded an agreement with University Microfilms, Ann Arbor, U.S.A., under which microfilms of the journal may be secured by libraries and industrial organisations which regularly file copies. Such films make possible the production of

the fifty-two issues in a single roll, at a cost practically identical with that of the usual binding. The microfilm, which is in the form of positive microfilm, comes forward on metal reels, suitably labelled, and is distributed only at the end of the volume year.

Inquiries should be made to "The Australasian Manufacturer" or direct to University Microfilms, 313 N. First Street, Ann Arbor, Mich., U.S.A.

## NEW DROP FORGINGS PLANT.

It was announced recently by the Minister for National Development, Mr. Casey, that Repco Ltd., Melbourne, in association with Kirstall Forge Ltd., Leeds, England, is to establish a £1,000,000 plant in Melbourne for the production of drop forgings, together with heavy motor vehicle front axles. "I welcome the plan for establishing this industry in Australia," said Mr. Casey. "I discussed the project with the man-

aging director of Kirstall Forge Ltd., Mr. R. F. Butler, when he was out here recently. Subsequently the Division of Industrial Development was able to give Mr. Butler considerable assistance. The project is an important development in Australian engineering production. It reflects the growing strength and diversity of our manufacturing structure and is of special interest to the automotive industry."

Representatives of the company are working in conjunction with the Victorian Government on the selection of a suitable site for the factory and the provision of the necessary facilities.

## METAL INDUSTRIES' ANNIVERSARY.

Last month, the Metal Industries' Association of South Australia celebrated the tenth anniversary of its foundation. Beginning with twenty-one members, the numbers have risen steadily to one hundred and fifty. As membership increased, the association grew in

stature and influence, bringing the metal industries together in discussions on the many and varied problems affecting their welfare. The Hon. F. T. Perry, M.L.C., and Mr. Wm. Queale, both past Presidents of the S.A. Chamber of Manufacturers and of the Associated Chamber, were prime movers in the foundation of the Association, which body is rendering service of the highest importance to the metal industries of South Australia.

## METAL TRADES PRESIDENT.

The Managing Director of Babcock & Wilcox of Aust. Pty. Ltd., Mr. Alan R. Browne, has been elected President of the Metal Trades Employers' Association.

The following other officials have also been elected:—Senior vice-president: Mr. W. E. Clegg, Commonwealth Steel Co., Ltd.; Vice-presidents: Mr. H. G. Ferrier, Ferrier, Dickinson and Weir Drysdale, Ltd.; Capt. G. I. D. Hutcheson, Cockatoo Docks and

## "MANUFACTURER" INDEX

The Index covering all issues of "The Australasian Manufacturer" from April 1, 1949, to March 31, 1950, is just off the press. It has been compiled for the use of libraries and for such industrial undertakings as regularly keep the journal on file. It constitutes a speedy and accurate means of locating articles which have appeared as Editorials, in "Around and About the Factory," in "Industrial Equipment News," in "After Business Hours," and in the general section. Will subscribers requiring copies please make early application. They will be despatched immediately on request.

Engineering Co. Pty. Ltd.;  
Treasurer: Mr. R. B. Hipsley,  
Hipsleys Limited; Members of  
executive committee: Mr. J. H.



Mr. Alan H. Browne, President,  
Metal Trades Employers'

McDonald, Crompton Parkinson  
(Aust.) Pty. Ltd.; Mr. E. W.  
Paull, Paull, Roberts and Parsons  
Pty. Ltd.

#### INTERNATIONAL RADIO APPOINTMENT.

Mr. W. H. Pearce was re-  
cently appointed General Manager  
and Director of International  
Radio Company Pty. Ltd. (Chas.  
E. Forrest, Managing Director)  
and its subsidiaries. Mr. Pearce



Mr. W. H. Pearce, General Man-  
ager, International Radio Co.

was formerly and for many years  
on the executive staff of Aus-  
tralian Consolidated Industries  
Ltd.

#### DEATH OF A.G.E. MANAGING DIRECTOR.

The death occurred in Sydney  
last week of Mr. L. F. Burgess.

managing director of Australian  
General Electric Pty. Ltd. The  
late Mr. Burgess was one of the  
pioneers of electrical manufactur-  
ing in Australia and was in charge  
of the electrification of Sydney's  
railways and the installation of  
the first turbines at Bunnerong  
power station. He was a member  
of the Australian Council of the  
Institution of Engineers.

#### INDUSTRIALIST GOES OVERSEAS.

Mr. J. E. Cestell, Director of  
British Oil Engines (Australasia)

Pty. Ltd., is visiting England  
and will be contacting the  
Mirreles, Petter and McLaren  
Works, BOEAUST's associates in  
England.

During Mr. Cestell's visit over-  
seas the BOEAUST organisation  
will be strengthened by the ar-  
rival of Mr. H. H. Meares, who  
is Joint General Manager of  
Associated British Oil Engines  
(Export) Ltd., of England.

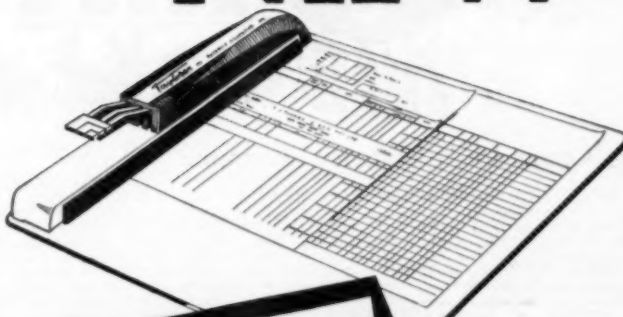
Mr. Meares, who flew to Aus-  
tralia with his wife and family,  
will be remaining in this country  
for about six months in order to  
contact the many Australian users

of BOEAUST generating plant  
and auxiliary, Diesel, and emer-  
gency engines.

#### ROTARY HEAT SEALING MACHINE.

Weston's Pty. Ltd., distributors  
of the "Quickpak" heat sealing  
machines described in our issue  
of 24th June, 1950, have re-  
quested us to mention the fact  
that these efficient units are  
being manufactured exclusively  
for their organisation by Preci-  
sion Engineering Co. Pty. Ltd., at  
Rushcutters Bay, N.S.W.

# it's NEW



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B 9591

Our editorial representatives in each State makes regular calls on manufacturers, but if YOU wish to see some particular phase of your business given publicity, communicate immediately with the Editor, and he will arrange for a representative to call.



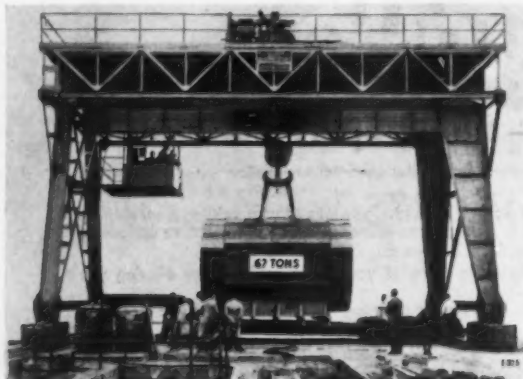
A digest of new factory and plant construction, additions, alterations and improvements, and operating news of Australian industry.

## Big Crane for Electricity Terminal Station

An 80 ton gantry crane has been built for the State Electricity Commission of Victoria by Malcolm Moore Pty. Ltd., Melbourne, and erected at the Brunswick Terminal Station. It will be used for installing and servicing large rotary condensers in the machine building.

extremely heavy lifts. The height of the crane from rail level to the top of the crab is 37 ft. and the span is 45 ft. The crab has a two-speed hoist motion and can lift 80 tons at 28 f.p.m., or 10 tons at 18 f.p.m.

The structure is electrically welded and the main connections



80-ton gantry crane is an indoor installation for the Brunswick Terminal Station.

The use of a gantry crane indoors is somewhat unusual. The type generally used inside buildings is the overhead travelling crane, which operates on an elevated runway supported by the building columns. However, in this case, where lifts up to 80 tons are required, a very strong and costly building would be necessary. The gantry crane, being supported on its own "legs" and running along rails at ground level, is most suitable for

are bolted. The bridge is of plate girder construction with lattice bracing. The bottom chords of the outer auxiliary girders form runways for 11 ton auxiliary hoists. One of the two portals supporting the bridge is rigid and the other is free. This is to achieve a statically determined structure. Each portal has two independently hinged two-wheel bogies; one driving, the other trailing.

## "Equi-Radiant" Furnaces

Distributed by Perkins (Aust.) Pty. Ltd.

In order that the equipment of Australian factories and engineering works may be kept fully up to date, it is imperatively

necessary that particulars of the latest overseas improvements and refinements should regularly be brought under the notice of fac-

tory executives and plant engineers.

The recognised medium for the dissemination of this knowledge is the technical journal, the journal in which the Australian representatives of overseas engineering organisations publicise the new machines and machine tools coming off the production lines of the old-established works abroad.

An interesting case in point is the ultra-modern equipment being produced at Smethwick, England, by the Incandescent Heat Co. Ltd., and distributed by Perkins (Aust.) Pty. Ltd., Bowden Street, Alexandria, New South Wales.

Much of this equipment is of major importance to many branches of Australian industry. This is particularly true of their "Equi-Radiant" vitreous enamelling furnace which, designed to operate as an economical, trouble-free unit, is proving a worthy successor to the conventional type of enamelling plant. It is characterised by the four follow-

ing outstanding advantages:—(1) It increases production. (2) It reduces maintenance costs. (3) Its use spells rapid heat recovery. (4) Heating is uniform throughout.

Another powerful and highly important unit is the Incandescent Heat Company's automatic gas machine. This mechanism converts solid fuels into hot transmittable gases for use in industrial furnaces. The fully automatic fuel feed, the fuel agitation, and the ash discharge and blower are operated from one central control.

Engineers of Perkins (Aust.) Pty. Ltd. will be pleased to advise manufacturers regarding the performance of the two machines here briefly described; to emphasise their suitability for specific operations; to point out in which directions and to what extent they ensure greater output and greater economy; and to indicate how their installation will infuse the spirit of modernity into the factory or the engineering plant.

## Flow Metering Problems

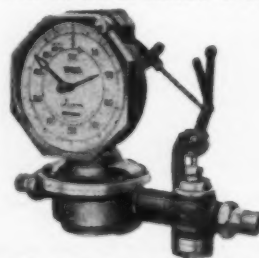
Fischer & Porter Co. Acquires Agency for Tylor Meters

The Fischer & Porter "Flowrator" meter is largely used on difficult liquids, particularly corrosives, but it is, of course, a rate meter and is not intended to measure batch quantities. To enable it to supply an integrating meter, also capable of handling acids, alkalis, hot liquids, etc., the Company has established an Australian Agency for Tylors of London, Ltd.

Tylors have a history going back 173 years, during the last hundred of which they have been making meters. They have a large business in water meters for export to various parts of the world and have held the running contract for the last 13 years for all water meters for the War Office, Ministry of Supply, Admiralty, Air Ministry and Office of Works.

In recent years the demand for meters other than ordinary water meters has led Tylors to create a separate department for industrial requirements. Units are now made for such jobs as hot water, hot tar,

fuel oil, calcium hydrate solution, acids, syrups, lacquers, anhydrous ammonia and many other liquids. With the present difficulty of ob-



This meter measures a given quantity of liquid and then closes automatically.

taining oil meters from U.S.A. Tylor positive meters are selling freely to users of fuel oil and to  
(Turn to page 20.)



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405 Collins Street, MELBOURNE, VICTORIA. 'Phone: MU 3956.

Agents—S.A.: Mr. Max Chilton, Baptist Buildings, Flinders Street, ADELAIDE. 'Phone: Central 5116. W.A.: Western Machinery Co. Pty. Ltd., 494 Murray Street, PERTH. 'Phone: BA 2495.



## INDUSTRIAL INSTRUMENTS FOR MEASURING, COUNTING, RECORDING.



### HAND TACHOMETERS

A guaranteed accuracy of  $\pm 0.5$  per cent. and a long life are combined in this high grade Hand Tachometer.

Available in 4 Models with recording ranges as follows:

Model A.T.H.4	(1) 0/500 r.p.m.	(2) 0/5,000 r.p.m.	(3) 0/50,000 r.p.m.
Model A.T.H.6	(1) 0/400 r.p.m.	(2) 0/2,000 r.p.m.	(3) 0/10,000 r.p.m.
Model A.T.H.7	(1) 0/200 r.p.m.	(2) 0/2,000 r.p.m.	(3) 0/20,000 r.p.m.
Model A.T.H.10	(1) 0/1,000 r.p.m.	(2) 0/5,000 r.p.m.	

The required range is engaged by turning the knurled knob to the point clearly marked thereon. A push button, conveniently placed, enables the operator to obtain readings on the machine-set indicating needle, and examine the instrument, if required, remote therefrom. By pressing button on opposite side of instrument, needle returns to zero.

Set comprises:

1. Hand Tachometer as described.
2. Male Rubber Centre.
3. Female Rubber Centre.
4. Disc for surface and cutting speeds.

The whole instrument is packed in a serviceable and attractive case.

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QLD.: Instrument Engineering Company, 32 Annerley Road, South Brisbane. XU 3228  
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HAND  
TACHOMETER





**FIGURE NO. 900**

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**ARTLAY MANUFACTURING COMPANY**  
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SYD. AGENT: WEST AUST. Evans & Inglis.  
VIC and TAS. AGENTS: Consolidated Merchandising Co.

(Continued from page 18.)  
manufacturers of vegetable oils. They are made in a variety of sizes and dial markings and either horizontal or vertical and even projecting for panel mounting.

In addition to straight integrating meters, dials are available with one or two re-settable pointers, suitable for batch measurements, etc. As dial sizes go up to 11 in. diam. very precise batches are possible. The Tylor "Automeasure" meter

measures a given quantity of liquid and then automatically closes a spring loaded valve. This model is in use in Australia for filling kettles in food canneries, mineral turps in varnish mixing, filling lined oil drums and tankers, filling washing machines, etc.

Fischer & Porter Co., 122 King Street, Melbourne, are specialists in flow metering problems and will be glad to supply further details to readers of this paper.

## Modern Engineering Equipment

Marketed by G. R. Gayfer and Co. Pty. Ltd.

The merchant-engineer plays a part of vital importance in the present-day industrial scheme. For him is the duty of informing plant engineers regarding the availability of new machines and machine tools coming into production in engineering shops both at home and abroad.

The effective performance of this duty demands three things. First, a quick appreciation of the improvements inherent in new designs. Second, a knowledge of the requirements of particular plants. And third, the capacity to impress upon fellow-engineers the advantages which will result from the use of the new and improved machines.

These duties are being discharged in expert fashion by G. R. Gayfer and Co. Pty. Ltd., 52 Pitt Street, Sydney, both the superiority of the lines they handle and the efficiency they bring to their task of merchandising, spelling to Australian engineering enterprises service of the highest order.

One of the most interesting of the mechanisms for which they are Australian representatives is the "Hodgkinson" underfeed stoker. This type of mechanical stoker has proved itself ideal for the efficient firing of boilers or industrial furnaces. It operates automatically under the control of either temperature or pressure, which may be kept constant. It must be pointed out that the "Hodgkinson" controlled feed stoker automatically feeds the correct amount of fuel from the hoppers to the fuel-carrying tube, and the correct air fuel ratio is always maintained.

The makers advocate the use

of bituminous coals which, they advise, though containing up to 50 per cent. "fines", still give satisfactory results. The controlled feed stoker, moreover, can also use coke and coke breeze without admixture of coal. Indeed, blends of coal and coke, nutty slacks, and open cut coals have all proved satisfactory alternative fuels. This, undoubtedly, is an outstanding advantage in these days of serious fuel shortages.

Other highly important plant for which G. R. Gayfer and Co. Pty. Ltd. act as Australian distributors is the "Ryaland" hot water accelerators.

The "Ryaland" Fullway pump, for instance, has been designed specifically for the heating engineer for handling hot water, or, alternatively, as an accelerator for central heating systems. All parts in contact with water are of gunmetal. It is equipped with leak-proof mechanical shaft seals. The pump requires no lubrication, while the motor bearings are grease packed and require only an occasional shot from a standard grease gun. The motor cannot be overloaded by normal usage. The pump is available in 2 in., 3 in., and 4 in. sizes.

Other lines distributed by the Gayfer organisation include "Radco" magazine feed boilers and heat transfer equipment; "Gulf" steel radiators, and "Gayfer" gas console space heaters.

Information concerning the performance of this ultra-modern equipment will be given gladly by the engineering experts of G. R. Gayfer and Co. Pty. Ltd.

## Heavy Duty Drilling Machines

Large Throat Capacity

The No. 3 Morse taper heavy duty drilling machine manufactured by Servian Machine Tools (Aust.) Pty. Limited, of 343a Sydney Road, Brunswick, Victoria, features a greater than usual throat capacity to permit drilling operations to be carried out on the larger job.

Of exceptionally rugged construction, this machine has been specially designed with an eye to extra

strains imposed by modern mass production methods. Having a useful range of eight speeds and three rates of feed, the latter are so designed and located that a change-over from hand to automatic feed can be effected with the greatest possible ease. The fine feed hand-wheel is located on the front of the head.

## DIE GRINDING GAUGE GRINDING SURFACE GRINDING

of all kinds of small or large parts from one to mass production quantities . . on new  
**Hydraulic Horizontal Surface Grinding Machine**

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Surface Grinder is equipped with horizontal and vertical micro feeds and Wet Grinding Equipment to obviate softening of hardened surfaces.

Working Surface of Table: 18in. x 6in.  
Divisions of vernier hand cross feed: 0.001in.

Maximum Height admitted between table and grinding wheel: 9in.  
Divisions of vernier hand down feed to wheel: 0.0001in.

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The quill is machined from solid steel, graduated to facilitate predetermined depth drilling. A balance weight is attached to assist movement and sensitivity of feed.

Working surfaces of both base and table are liberal, vertical adjustment of the latter being facilitated by a handle actuating a worm and wheel requiring a minimum of exertion on the part of the operator. The table swings through 360 degrees and can be locked, while the whole table assembly may be swung either right or left to enable the base to be used for large work.

The spindle is of high grade construction and is machined from solid high tensile alloy steel, has four splines, and is ground all over. The spindle nose, bored to No. 3 Morse taper, runs in phosphor-bronze bearings.

Generated nickel iron gears ensure maximum durability and smooth meshing. All gears are protected by cast iron housings.

Efficient transmission is guaranteed by a triple "V" rope drive from the motor to the counter-shaft, which is mounted on a bracket and runs in phosphor-bronze bearings. A push button type ironclad overload switch is mounted on the left-hand side of the head.

The eight spindle speeds—with the 1440 r.p.m. motor fitted—range from 45 to 875 r.p.m., while the automatic feeds provided are .006 in., .010 in., and .015 in. per revolution. The base is double ribbed, has coolant troughs and two T

slots, and has provision for holding down bolts where required.

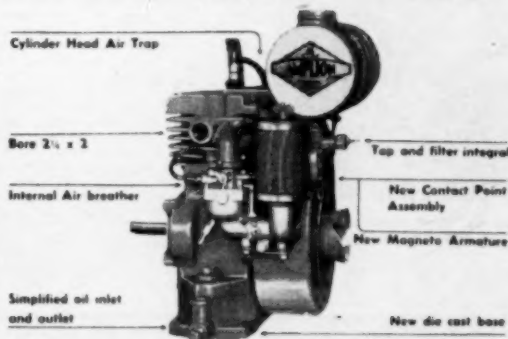
When using the table, the maximum distance between the spindle and the table is 25½ in.—while the maximum clearance to the base is 41½ in. when the table is swung out of the way. Clearance between the spindle and the column is 13¾ in., while the overall height is 75 in.

Weighing approximately 9 cwt. on the bench, the packed weight of the Servian No. 3 Morse taper heavy duty drilling machine is 13 cwt.

### FAST EXTENSIONS AT AUSTRALIAN IRON & STEEL.

Australian Iron and Steel Ltd., Port Kembla, N.S.W., the largest subsidiary of the Broken Hill Pty. Co. Ltd., is in process of implementing a huge expansion programme. Included in the scheme is the erection of a hot strip steel mill, a cold strip mill, and a tinplate plant, the whole representing the largest industrial project yet embarked upon in Australia, dwarfing the original steel plants at both Newcastle and Port Kembla. It is estimated that construction will involve millions of pounds and take many years to complete. It will at one and the same time double Australia's output of steel and initiate production of tinplate.

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Availability August.

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YOU WANT TO KNOW . . . and the editors will gladly tell you . . . more about the inventions, materials, and processes mentioned on this page. Write to Box 1687, G.P.O., SYDNEY, enclosing a stamped, self-addressed envelope.

## Automatic Double-spindle Nut Tapping Machine

Shown in the accompanying illustration is a fully-automatic, double-spindle nut tapping machine, of patented design, recently introduced by a British firm. As in the case of the firm's other well-known tapping machines, the bent shank tap principle is employed, whereby the

with a spindle speed of 600 r.p.m., up to 150 nuts per minute for a spindle speed of 2,000 r.p.m. Thus, 2-in. Whitworth free-cutting steel nuts, for which 98 ft. per minute (1,000 r.p.m.) is a suitable cutting speed, can be tapped at the rate of 80 per minute.

The ball-bearing tap spindles are driven by 1-h.p. motors through V-belts; sets of interchangeable motor pulleys being provided to give ten speeds ranging from 600 to 2,000 r.p.m. The vertical feed movement of the spindles, and operation of the feed fingers which move the nuts to the working position, are controlled by compressed air, which may be supplied, at the required pressure of 80 lb. per sq. in., from the factory air line.

The nut blanks are loaded into the hoppers, and are directed by the action of compressed-air-operated agitator plates into feed channels, down which they move by gravity towards the work stations. At the lower end of each channel, a feed finger, operating from below, engages the nut by the hole and pushes it forward into contact with an adjustable back stop on the table. The tapping spindles then move down under the action of gravity to thread the nuts, and are returned by air pressure. The rate of down feed of the taps into the blanks is predetermined by adjustment of a valve in the air circuit.

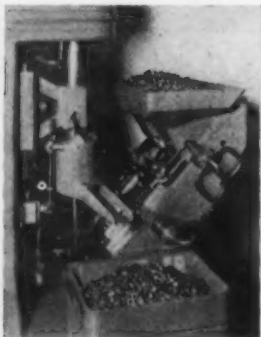
If the downward movement of either tapping spindle is obstructed, due to the nut blank not being in position against the back stop, incorrect setting of the stop, or a faulty blank, the feed motion is stopped automatically, thus obviating tap breakage.

The time cycle for operation of the mechanisms controlling feeding of the blanks and raising of the tapping spindles remains constant over the whole range of

nut sizes, the output of the machine being determined by the tap speed selected and the length of thread to be tapped.

The on/off air-supply valve, pressure-adjusting valves, and feed mechanism starting valve are conveniently situated on the right-hand side of the machine

head, while the main air and electrical control equipment is housed in the cabinet base. The latter also contains a coolant tank and an electrically-driven pump, which are easily accessible upon the removal of louvered covers. The space occupied by the machine is 2 ft. 3 in. by 3 ft. 6 in. [2490].



Close-up view showing the hopper and feed arrangement.

nuts are progressively fed over the shank of the tap by the action of tapping. The nuts are then discharged from the rotating tapping head by centrifugal force and fall down a chute whence they are directed into a suitable container.

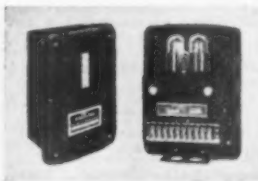
The machine will handle hexagon nuts from 7/16 to 1 in. across flats, or square nuts from 7/16 to 1 in., with Whitworth, B.S.F., and comparable threads ranging from 3/16 to 7/16 in. diameter. Nuts up to a thickness equal to the diameter of the tap can be dealt with under normal conditions.

Rates of production obtainable range from 50 nuts per minute.

## Temperature Control Unit Anticipates Change

In conventional pyrometer installations the temperature control point must be passed in one direction or the other before any control action takes place. This means a constant fluctuation in temperature. The instrument illustrated below has two antic-

The instrument is applicable to all types of electric furnaces, ovens, injection moulding machines, and other equipment employing conventional millivoltmeter and potentiometer type controlling pyrometers, or gas fired equipment employing solenoid-controlled or motor-operated valves. The case is 8 1/2 in. high, 6 1/2 in. wide, and 3 in. deep, and is made for wall mounting or flush mounting in cabinets or panels. [2475].



Front and rear views show simplicity of design. Action is entirely electric. There are no mechanical parts to cause time lag and introduce inaccuracy.

pator tubes to catch the smallest temperature variation and act to control it before any control point has been reached. The temperature chart shows a perfectly straight line when the new unit is in operation.

The anticipator tubes have two miniature thermo-couples and a small heating element. The only moving part in the instrument is a small, two-position relay. The operation is entirely electric, there are no mechanical parts to cause time lag.

Industrial users with operations requiring precise medium- and high-temperature controls will be interested in a new electronic controller recently introduced. Constructed to withstand severe conditions of dust, fumes, and vibration, the equipment is available with 13 standard measuring ranges. Employing a sensitive thermocouple element, the instrument has a measuring circuit consisting of a null balance potentiometer with automatic cold junction compensation. Other features are: unbalance voltages are converted to A.C. and amplified electronically; control action is continuous and high speed; and frequency of standardizing is greatly reduced by a new battery and circuit. [2433].

## Electronic Pyrometer

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*Illustrated at right: The Conveyancer Mark XVI, Diesel-engine drive—with twin pneumatic tyres, 12 feet lift (full loaded) in 8 seconds—rated for heavy duty.*



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## Automatic Controller for Dyeing Has Two New Timers

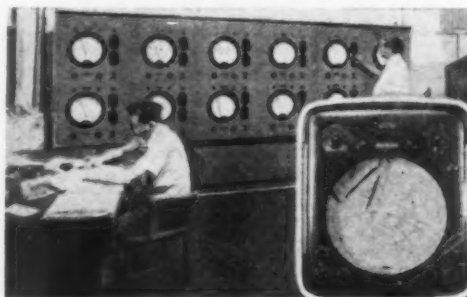
A new model controller for automatic control of dyeing machines has been announced. Trial installations in several mills are said to have proved satisfactory in every respect.

The new model is said to incorporate many improvements in design which offer new advantages, greater convenience, and a more compact assembly. This latter point is important where instruments are to be panel mounted, as three can now be installed in the panel width which two formerly required.

The controller is an automatic dye-cycle controller which has no

tion becomes fully automatic. At the end of the cycle the heat supply shuts off and a signal lamp calls the operator. If the same cycle is to be repeated, the operator needs only to push the start button again when the dye machine has been loaded.

Beside the automatic push-button feature for the dyeing cycle, two additional timers (adjustable inside the case) have been added in the new model. The first of these, the initial timer, is used to allow the dye bath to come to a uniform level temperature before the addition of the dyestuff and the start of



Eleven controllers are installed in a floor-mounted, totally enclosed cabinet in this dyer's office. Inset shows the new model controller.

cam mechanism nor any auxiliary instrument. The instrument controls the rate of temperature rise, in a dye bath, for example, and maintains the correct dyeing temperature through its holding-period timer when that temperature is reached. Settings for the dyeing cycle are made by means of the four knobs on the front of the instrument case, including the rate of temperature rise in degrees per minute, and the holding period, from 5 min. to 3 hr. When the operator pushes the start button, the controller takes over, and opera-

tion becomes fully automatic. At the end of the cycle the heat supply shuts off and a signal lamp calls the operator. If the same cycle is to be repeated, the operator needs only to push the start button again when the dye machine has been loaded. Beside the automatic push-button feature for the dyeing cycle, two additional timers (adjustable inside the case) have been added in the new model. The first of these, the initial timer, is used to allow the dye bath to come to a uniform level temperature before the addition of the dyestuff and the start of

## Trans-illuminated Tracing Table

A new trans-illuminated tracing table, originally developed for the hydrographic department of the Admiralty, where charts printed on thick paper are under constant detailed examination, is now available for the drawing office for making tracings or for any work which requires a plan for drawing to be evenly illuminated from the reverse side.

The lighting system consists of a large parabolic reflector, with the light source, a 40-watt, fluorescent strip lamp, positioned at the focal axis of the parabola. The rays of light are thus all reflected parallel to each other, resulting in even illumination of

the frosted glass observation screen, the latter measuring 54 by 32 in. The table is fitted with 6 ft. of flex and is suitable for operation on 200/250 volts, 50 cycles.

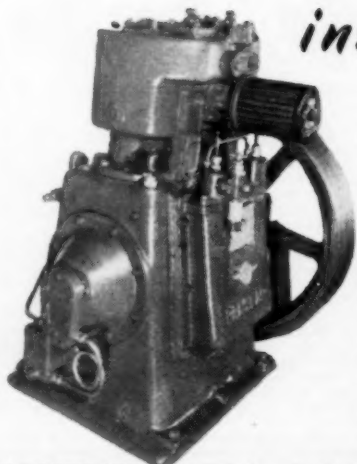
The top of the table is set at an angle of 3 deg. to the horizontal, but, when required, an adjustable rack can be fitted to permit the angle of the screen to be altered for the convenience of the operator. Additional lamps can also be fitted for any special application of the table. The frame of the table is constructed of pine and hardwood, and the overall dimensions are 3 ft. 6 in. by 3 ft. 5 1/2 in. by 5 ft. 1 in. [2469].



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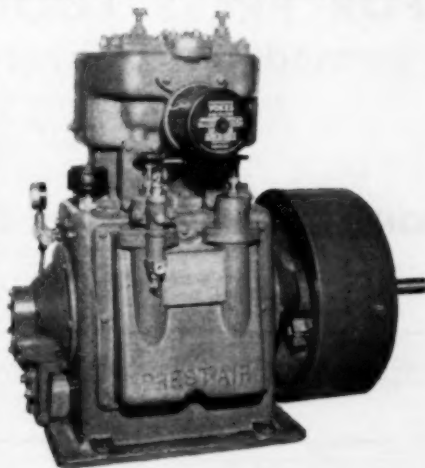
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The range of "PREST-AIR" Air Compressors covers models of capacities up to 200 cfm, free air delivery at 100 lbs. pressure per square inch. Two of the models, the P.130 on the left and the P.80, are illustrated on this page. The accompanying table gives further details of the models in this series. These **HEAVY DUTY** Compressors are available for immediate delivery, together with motors of the recommended size.



The "PREST-AIR" Compressor is a precision-built product. Minute attention has been given to detail and only high-grade material used in its construction. Drop forged components have been used throughout; automatic air governors and manual unloaders are standard equipment. Other outstanding features can be discussed with you by our technical staff, who are at your disposal.

Compressor	F.A.D. C.F.M. (Approx.)	R.P.M. (Approx.)	H.P. at Flywheel at 100 lbs. pressure	Recommended Motor Size	Cylinder Diameter and Stroke, Ins.
Single Cylinder P40	30	350	7	7½	6 x 7
	40	440	8½	10	
	45	500	9½	12½	
Twin Cylinder P80	60	350	14	15	6 x 7
	80	440	17	20	
	90	500	19½	25	
Twin Cylinder P130	100	350	22	25	7 x 8
	130	440	27	30	
	145	500	30½	35	
Twin Cylinder P200	160	300	35	40	8½ x 10
	200	370	42	45	
	215	400	45½	50	



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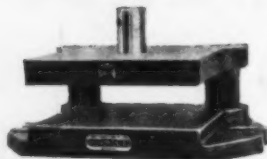
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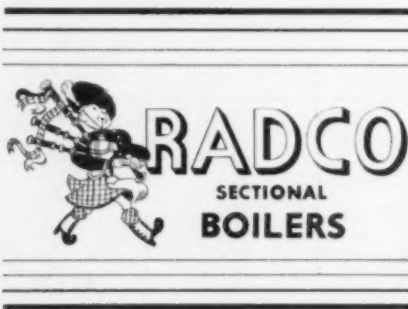
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### Shuttle Valve Handles 3,000 Psi

Produced primarily for aircraft use, the shuttle valve, illustrated, also has industrial applications where it is desired to supply alternate pressure sources to a cylinder or other device as precaution against emergency or for other design reasons. It is made in tube sizes 6 and 8, which have outside tube diameters of 1 and 1 1/2 in., respectively.

The valve will shuttle against a closed line. The shuttle will not unseat from surge flows or negative pressures. Surge flows will not displace the synthetic rubber seat. Showing no evidence of deformation or failure at burst test pressures of 7,500 psi, the valves have a pressure drop of less than 10 psi at rated flow.

Under test, this valve shows zero leakage of static pressures of 3,000 psi or proof pressure of 4,500 psi, and zero leakage while



Shuttle valve for aircraft use.

shuttling under air or oil pressure. Pressure drop is less than 10 psi at rated flow. [2461].

### Portable Hardness Testing Device

The hardness tester, illustrated, enables inspection personnel to make rapid, on-the-spot hardness tests on finished assemblies or raw stock. Weighing 12 oz., the instrument is designed for one hand operation. The tester detects hardness by measuring the depth of penetration of a spring



Hardness Tester.

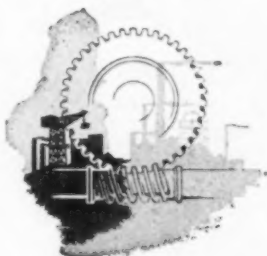
is located at the top of the instrument where it is always visible to the operator. Dial graduations read from 1 to 100. By use of calibration charts, readings on the instrument dial can be converted to Rockwell, Brinell and other common scales. The maximum dial reading corresponds to a Rockwell E rating of 107. All adjustments are enclosed in the case. [2471].

### New Low-Temperature Alloy

A new low-temperature alloy having negligible shrinkage and an extensive melting range, has been introduced. This non-eutectic alloy of bismuth and tin has the following physical properties: Melting range, 281 to 338 deg. F.; yield temperature, 302 deg. F.; density, 0.296 lb./cu. in.; and shrinkage, 0.000 in. per inch.

Because of the wide melting range it is possible accurately to reproduce the shape, dimensions, and fine surface details of a master pattern. [2479].

loaded indenter into the specimen. The accurately ground indenter point is protected by a sleeve, which is also spring actuated. When the instrument is pressed against a specimen, the sleeve slides back to allow the indenter point to penetrate the non-ferrous or plastic material. A series of linkages translates the distance of penetration into rotation of a dial pointer. The dial



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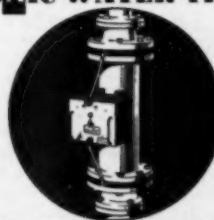
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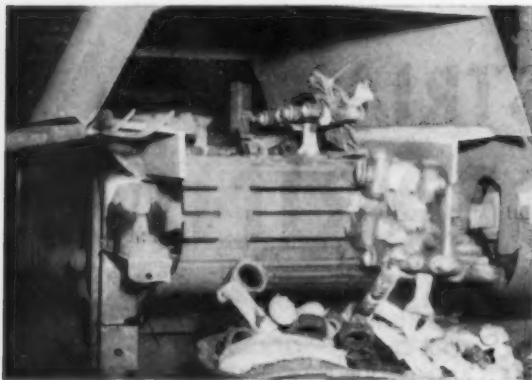
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"Hard" castings, after the shakeout, coming from a conveyor belt. From this point they go to scientifically-controlled annealing ovens.



Annealed castings of a variety of "E.W." pipe fittings before treatment in the rumblers (background). After rumbling, they pass to Pangborn equipment for rotoblasting.

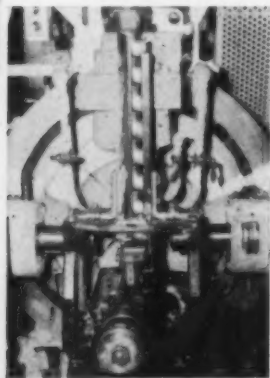
## Malleable Pipe Fittings

### The Production of Vital Links for Modern Gas, Steam, Water and Oil Installations

It has been said of the art of casting metal that its greatest asset is its flexibility. No matter how illegible your signature may be, write it in the sand and the molten metal will faithfully follow its convolutions. No other art or process is capable of making metal take such an infinite variety of shape and form in three dimensions. And no other art finds its potential markets so broadly distributed over the entire range of material applications.

When referring to variety of shape and form, the speaker might well have had in mind the complex nature of modern fittings for gas, steam, oil and water pipe installations, a material application of iron casting that is of greater importance to-day than ever before.

THE increase in population and the expansion of manufacturing activity in Australia at the



A magazine-fed screwing and tapping automatic, one of three newly-installed at E. W. Fittings Ltd. The fittings shown in the magazine are 1 in. elbows.

present time has focussed and made urgent the need for homes for workers and for modern factory buildings to house this activity. And building to live in and building to work in mean much more than the assembly and erection of bricks and mortar. Major sections of industry are linked to this vitally important programme. Metal, plastics, glass, textiles, are a few that come instantly to mind, and under each of these headings could be listed innumerable fittings without which home and factory buildings would be mere shells.

Common to homes and factories alike, and therefore high on the list of requirements, are pipes and their fittings; for water and gas in the home, and for water, gas, oil and steam in the factory. And the complexity of modern installations, the veritable maze of pipes carrying these commodities to every point at which they are to be tapped, draws special attention

to the variety of shape of the fittings which are vital links between lengths of straight piping. There are bends, elbows, T-shaped pieces, crosses, reducing sockets, back-nuts, unions, flanges, and many others.

How many others?

"We make 29 different varieties of fittings", said Mr. H. L. Parker, production manager of E.W. Fittings Ltd., when we approached him at the company's busy factory at 107 Victoria Road, Marrickville, N.S.W., for more information on the subject. "These fittings come in various sizes, some as many as 48. Our total range is 296 different pieces".

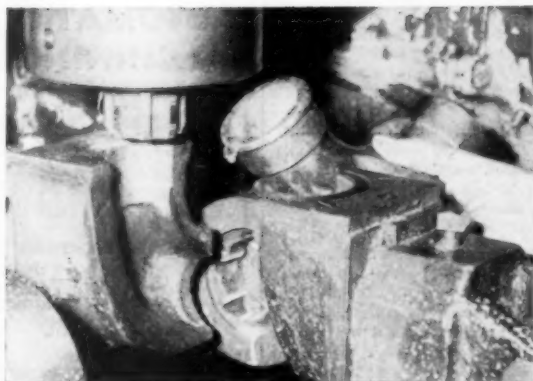
Interchangeability and perfect alignment are obvious requirements in manufactures of this type. Mr. Parker pointed out that precision finish and an ample reserve of strength are also necessary in a modern high-class pipe fitting.

E.W. fittings are cast from the



Mr. S. W. Reynolds, plant and maintenance manager (left) points out to Mr. H. L. Parker, production manager, important features of a new 24 in. high speed shaping machine which was being uncrated for installation in the factory's maintenance section.





A 2 in. bend receives male and female threads simultaneously in this 6 in. capacity automatic screwing and tapping machine.

finest raw materials and are subject to close check throughout processing. They are produced to unfailing standards of accuracy by the use of a complete set of British Standard Pipe Thread Gauges, and are tested to 300 lbs. pressure p.s.i.

The raw material for E.W. fittings is high test black heart malleable iron. Black heart malleables, Mr. Parker explained, are more difficult to produce free from blowholes, but strict technical control is the means of producing a metal as sound as any other ferrous product. Because of the higher pouring temperature, greater fluidity of the molten metal, and the use of fine-grained moulding sands, the castings have a better finish where paint coverings need to be applied. Malleable provides the greatest uniformity of structure obtainable in iron and there is a relative freedom from intensive strains.

In addition, he said, the yield point of malleable is about 65% of its ultimate strength; this compares favourably with soft mild steel castings. Thus, a high test black heart malleable casting with an ultimate strength of 50,000 lbs. p.s.i. possesses a useful yield strength.

Research has long since shown the fallacy of the belief that the valuable properties of a malleable casting are confined to its surface. This theory grew, and was long held, as the direct result of a belief that malleability was due exclusively to the decarburising effect of packing material instead of the breaking up of the hard carbides

and the formation of ferrite, the most ductile form of iron. Microscopic examination showed, of course, that this change is not confined to the outer layers but extends right to the centre of the casting.

The misunderstanding which existed regarding the use of malleable iron for industrial purposes was based largely on an incomplete knowledge of fabrication. The production of high test black heart malleable castings involves two steps:

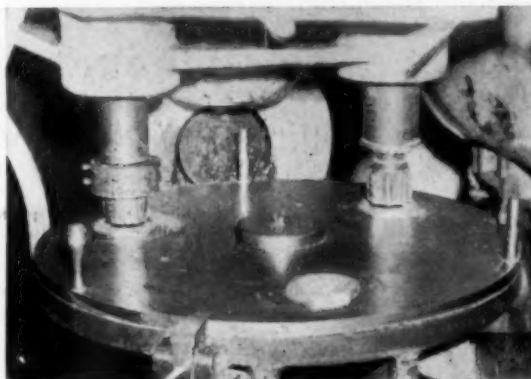
- (1) The production of a casting in which the carbon will exist as carbide of iron. This casting is white in fracture, hard and brittle.
- (2) The casting is subjected to a heat treatment to break the hard carbide into its components, both of which are soft. Thus is produced a casting which is strong, tough and ductile, and which consists of carbonless iron (ferrite) and free carbon which segregates through the mass as in nodules of graphite or temper carbon.

Machining and threading, explained Mr. Parker, are performed on E.W. fittings with the utmost speed and economy due to the presence of this free carbon or graphite which forms a natural lubricant for the cutting tool.

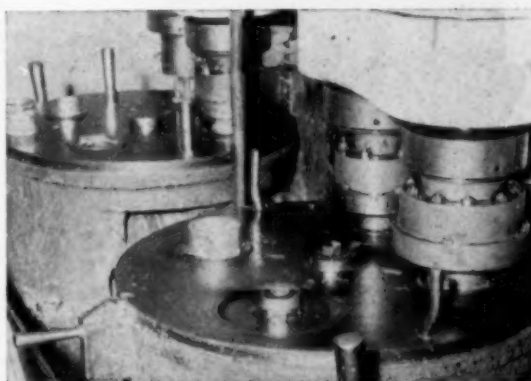
This, then, is the process by which E.W. pipe fittings are produced; and this the material of which they are composed and which gives them ample reserve strength—a scientifically calculated margin that saves time and cost in maintenance and saves breakdowns and replacements.



A bank of automatic screwing and tapping machines at E. W. Fittings Ltd. Capacity of these machines is from 1 in. to 1 1/2 in.



Reaming and tapping 1 1/2 in. socket union nuts. In this machine, castings are loaded at the point near camera, move to the reamer (left) and from there to the tapping spindle.



On this 3-spindle screwing and tapping automatic, 2 in. hexagon nipples, 2 in. plugs, 1 in. socket union plugs and 2 1/2 in. x 1 1/2 in. bushes are being screwed and tapped in one operation.



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Inspection of the foundry in which these fittings are cast reveals that the advantages of this method of fabrication and the high quality of the raw material are here enhanced by the degree of skill of the foundrymen and by a system of carefully checking quality at all stages of manufacture. Cast, annealed, rumbled and rotobladed, the E.W. pipe fitting at all times is under the critical scrutiny of expert foundrymen.

This careful checking of quality is, if anything, intensified when the castings pass from the foundry to E.W. Fittings' sanding and machine shops. Here, after being sorted in types and sizes and going to grinding wheels for the removal of any runners and fins, they are subjected to a strict examination at an inspection bench.

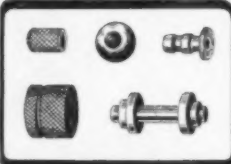
E.W. pipe fittings are supplied either galvanised or black, and it is at this stage of processing that those for galvanising are given the order of the bath. After this treatment they are ready to go with the others to the machines.

Indications of a careful and successful housekeeping programme are apparent in the machine shop of this modern factory. The first glance around shows an orderly layout of clean, neatly painted machines. On closer examination the machines are obviously modern and kept at the peak of condition. And to examine the equipment and processing in detail, as we were permitted to do on this occasion, is to discover that production here is highlighted by two main features: (1) the skilled operation of the most modern and efficient screwing and tapping machines to obtain the maximum and most economic production possible, and (2) the careful control of gauge and alignment to ensure uniformity and interchangeability.

Evidence of the company's determination to boost production whenever possible by the acquisition of new machinery of improved design was readily to hand. Three new magazine-fed screwing and tapping automatics had just been placed in position and were receiving last-minute adjustments before adding their quota to the output of this vigorous company. Adjacent to the already well-equipped maintenance department a new 24in. high speed shaping machine stood in the remains of its crate, awaiting installation.

(Turn to page 32.)

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FULL DETAILS FROM:

# ELECTRIC MOTORS

For Smoother Running

AUSTRALIAN REPRESENTATIVES

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Wool waste for axle boxes. Cotton waste for all industrial purposes.
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Ideal for all industrial and domestic polishing purposes.
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Light weight. Especially suitable for the meat export trade.
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- **INSULATING AND CARPET UNDERFELTS**  
For homes, hospitals, hotels, offices, etc.
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Highest quality ingredients ensuring cleanliness and hygiene.

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PHONE MU2505  
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**METALEX Brass Rod** will help to solve your problems. Rounds, Hexagons and Squares available from stock. Shapes produced to specification with minimum delay.

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BRASS  
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BRONZE**

High Speed Machining Brass  
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Manganese Bronze  
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And to Specification

Let us help with  
your problems

Expert technical service  
readily available

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'Phone: UM 1063

Selling Agents:  
NOYES BROS. (Melb.) LTD. Adelaide, Hobart, Launceston,  
897 Lonsdale Street Devonport, Perth,  
MELBOURNE. Phone: MU 9031. Broken Hill.  
NOYES BROS. (Sydney) LTD. Brisbane, Wollongong,  
115 Clarence Street Mildura, Newcastle,  
SYDNEY. 'Phone: BX 1781. Mackay.

Reduce cost by returning scrap to us at best prices.

Part of the comprehensive range of malleable pipe fittings produced at this factory could be seen at the busy automatics. On one of the largest (with a capacity of 6 in.), 2 in. bends were receiving male and female threads simultaneously. Along one side of the factory a bank of screwing and tapping automatics were busy with a number of the smaller fittings within their capacity of 1 in. to 1 1/2 in., including 1 in. elbows, 1 in. 3-way elbows, 1 in. tees, 1 in. bends, 1 in. x 1 in. reducing sockets, 1 in. m & f elbows, 1 1/2 in. m & f bends, and 1 1/2 in. f & f bends.

Beyond them, 1 1/2 in. socket union nuts were being reamed and tapped in a modern automatic. Opposite, an 8-spindle machine was simultaneously screwing and tapping 2 in. hexagon nipples, 1 in. socket union plugs, 2 in. plugs and 2 1/2 in. x 1 1/2 in. bushes.

Nearby, expert technicians from the maintenance department made precise adjustments to a multi-spindle screwing and tapping machine for operation on 1 in. x 1 in. bushes, 1 in. x 1 in. bushes, 1 in. backnuts, and for the internal screwing of small socket union parts.

It is from these and other modern machines that E.W. Fittings Ltd. to-day are making a worthwhile contribution to the nation's vitally important building and construction works.

In thirty years the company has gained, and retained, a lot of "know-how" in the production of pipe fittings. To this is added the policy of keeping output at the highest possible figure by the use of modern, well-tended and maintained machinery and equipment, and of a ceaseless and strict control of quality and accuracy at all stages of manufacture.

The direct result is an admirably sustained production of malleable pipe fittings of various sizes and shapes that are destined to be strong, durable links in gas, steam, water and oil installations in the factories and homes of Australia.

### PROFIT SHARING.

Over 11,000 employees at Vauxhall Motors, Ltd., received an average of £8/0/7 in 1949 each under the firm's profit-sharing scheme, an increase of about 40 per cent. over last year. Amount shared between workers was £91,991, bringing the total sum distributed since the scheme started in 1935 to over £1,000,000.

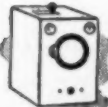
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Bumper Bars for  
"Chevrolet"



Fittings for  
Concrete Mixers



Body Panels for  
Washing Machines



Fittings for  
Refrigerators

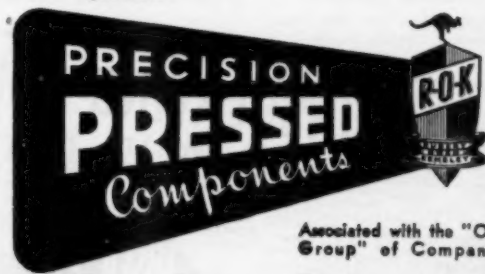


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are pressing . . .  
Consult the specialists



Certainly! . . . R-O-K can precision press  
light, medium and heavy gauge components  
in all metals, for all purposes. In fact, with  
their modern press line, machine shop,  
processing plant, drawing office and assem-  
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## RELIABLE AND UNIFORM IN QUALITY

MICA is probably the most important of electrical insulating materials, but is limited in size, and, to overcome this disadvantage, a close relative, MICANITE, is used by the electrical industry.

MICA and MICANITE Products are manufactured in our own factory, and can be supplied at short notice.

MICA — Washers, Elements, Plates, Discs and Segments.

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MICANITE PRODUCTS — Products for practically all commercial applications.

We can materially assist you with your Insulation Problems. Consult us at:



## MICA & INSULATING SUPPLIES CO. PTY. LTD.

SYDNEY: 168 Clarence St. Phone: BX 5011  
(3 lines). MELBOURNE: (Regd. Office),  
542-4 Bourke St. Phone: Insulation Dept.,  
MU 6901 (8 lines); Electrical Dept., MU 6903.  
MU 1936, Cent. 6506. BRISBANE: Mica  
House, 134 Albert St. Phone: B 8803.  
ADELAIDE: 68 Flinders St. Phone: C 4803.

MISCO

PERTH: 856 Hay St. Phone: B 3070.  
Brookman and  
KALGOORLIE: Car. K 724. LAUN-  
CESTON: T. & G. Bldg., Paterson St.  
Phone: 895. HOBART: 147 Liverpool  
St. Phone: 7589.  
Interstate Agents for the products of the  
Ormiston Rubber Co. Pty. Ltd., Melbourne.

## EXPORTERS' PROBLEMS.

Speaking at the Annual Conference of the Australian Exporters' Federation which was held recently in Perth, the President, Mr. Arthur Sparks, said that the many restrictions which had been placed by the Government and the various Boards on export from this country have already cost us markets which we should have fostered and expanded, had these authorities been far sighted enough to have removed them two or three years ago.

The position has been further complicated by the 40-hour week and the apparent disinclination to bring our production to the point which should have been at this stage. As a consequence, those who know the overseas market position, and having in mind that because of the introduction of exchange controls and import restrictions there are few countries in the world with which we can now trade on an unrestricted basis, freely express doubts as to whether it is not too late to amend the trouble which these restrictions have brought upon us.

He expressed the hope that contrary to past experience and example, the Commonwealth Government would appreciate the principle that it is Government's function to create conditions conducive to trade and leave the actual mechanics of trade in the hands of those whose experience and knowledge made them best fitted for carrying out these tasks. As one means of helping the exporter, he felt that energies should be devoted to endeavouring to bring about any alteration in restrictions of other countries in order that we can expand our trade with them, even if this means some intelligently directed slackening of some of the restrictions on the import of that country's goods into Australia. He said he meant this in the widest possible sense and as a long term policy, otherwise we will automatically arrive at the position where we can only export our raw materials and primary produce, and none of our processed and manufactured goods, the export of which is essential if we are to take care of the increasing productive capacity of secondary industry in this country, notwithstanding the high value and benefits derived from the exports of our main primary products.

## JAPAN DEVELOPS NEW PLASTIC.

Japan expects at an early date to begin the export of a new plastic developed by her after ten years' research. It is called vinylon and derives chiefly from limestone and carbon. Its manufacturers claim that it is resistant to chemicals, fire, insects, mildew and fungus, and that it may be used in such widely differing products as fishing nets, ropes, clothing, yarns, knitting yarns, carpets, and surgical threads.





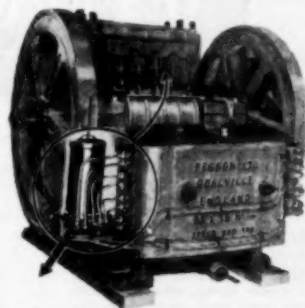
## Greaseless bearings cause damage! **TECALEMIT *Automatic* Lubrication protects machinery**

An oversight or a stoppage in a manual lubricating system may result in serious and costly damage to valuable machinery. In any case, with manual systems, there is no guarantee that grease will reach every working part.

The Tecalemit Radial Mechanical Lubricating Pump ensures that the correct quantity of fresh grease is supplied to from 1 to 20 points at pre-determined intervals. The system is entirely automatic—the pump is normally operated from a rotating member of the machine.

The Tecalemit Radial Mechanical Lubricating Pump has proved its versatility and efficiency on installations such as the mechanical lubrication of Stone Crushers, Centrifugal Pumps, Escalators, Rolling Mills, Mixing Plant, Overhead Cranes, etc.

*Insure against frequent overhauls, breakdowns, high maintenance costs—contact us for details of the wide range of manual, mechanical, air and electrically operated semi- and full-automatic Tecalemit Lubricating Systems.*



Tecalemit Radial Grease Pump, Model 17850, fitted to a 25" x 16" jaw crusher. There is a Tecalemit Application to suit every class of industry.

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ME. 1 HP



*Hurricane-*  
FORCED AIR HEATING.

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Designed for Maximum Efficiency in

- DRYING
- ENAMELLING
- CORE BAKING

All ovens and dryers are heated with electricity, gas or steam, and complete with full automatic temperature control.

**WESSBERG & TULANDER PTY. LTD.,** *Industrial Drying Engineers*

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# INQUIRIES FOR PLANT MATERIAL AND AGENCIES

"THE AUSTRALASIAN MANUFACTURERS" INQUIRY DEPARTMENT

This Inquiry Service is for the use of readers of "The Australasian Manufacturer" who wish to trace suppliers of Plant, Equipment and Materials, and for particulars of agencies offered. Address your inquiry to the Inquiry Department, and give the fullest possible particulars to enable us to put you in touch with the best sources of supply. **INCLUDE A STAMPED SELF-ADDRESSED ENVELOPE WITH YOUR INQUIRY.** It is essential that telephone inquiries be confirmed by letter. No charge is made for Inquiry Services, but normal advertising rates will be charged if agencies are sought by manufacturers' representatives or if goods are offered for sale. For the benefit of new subscribers, inquiries will be published in two or more consecutive issues.

## SPECIAL NEW INQUIRIES.

**WHEN REPLYING** to an Inquiry, please quote the Reference Number and send your reply to the Inquiry Department, "The Australasian Manufacturer," 16 Bond Street, Sydney. **INCLUDE A PLAIN, STAMPED ENVELOPE** so that we can forward your reply to the Inquirer.

**SPRING EYEING MACHINE:** If you can supply a Sydney firm with a Spring Eyeing Machine, hand type, suitable for eyeing large springs, approximately 1 in. O.D. x 10 s.w.g., write to Ref. 8207, c/o "The Australasian Manufacturer."

**FOUNDRY METALLURGIST AND TECHNICIAN—POSITION WANTED:** The Inquirer who recently arrived from England, seeks a progressive position. Wide experience of analysis, testing, melting furnace control, sand control and general foundry technology in iron and non-ferrous foundries. Write to Ref. 8208, c/o "The Australasian Manufacturer."

**ELECTRIC MOTORS FOR SALE:** Melbourne manufacturer has for sale a number of new 1/2 H.P. Split Phase Motors. 240 V., 1,400 R.P.M., American make. Write Ref. 8209, c/o "The Australasian Manufacturer."

**WANTED:**—Babcock & Wilcox Water Tube Boilers, complete, one approximately 3,000 Square Feet, one approximately 6,000 Square Feet Heating Surface. Write to Ref. 6577, c/o "The Australasian Manufacturer."

## PLASTIC MOULDINGS, DIES AND AUTO. LATHE CAPACITY

Specialists in Electrical and Industrial Mouldings. Prompt service.  
**MASTERCRAFT PLASTICS**  
72 Parramatta Road, Stanmore,  
N.S.W. LA 2690, FW 3619.

**CHILLED IRON ROLLS FOR SALE:** Sydney firm has for sale a quantity of high quality Chilled Iron Rolls of American manufacture, 15 in. diameter, 15 1/2 in. face. All ground finish. Illustrations and specifications supplied on application to Ref. 8210, c/o "The Australasian Manufacturer."

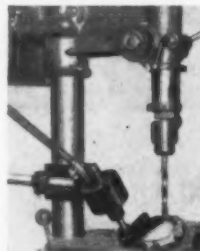
**SURPLUS MATERIAL AVAILABLE:** Adelaide manufacturer has the following surplus stock for sale: 10,600 lbs., 6 ft. x 1 ft. x 26 gauge Soft Brass Strip, 2,100 lbs., 6 ft. x 1 ft. x 24 gauge Soft Gilding Metal Strip; 4,600 lbs., 21 in. x 22 gauge Soft Brass Strip; 1,900 lbs., 9/16 in. Aluminium Rod (Turning Quality); 500 lbs. 3/16 in. Round Steel Rod; also 4 only No. 2 Samson Spray Guns; 2 only Type CH.13.903 De Villiers Spray Guns. Write to Ref. 8211, c/o "The Australasian Manufacturer."

**AGENT FOR VICTORIA WANTED:** N.S.W. Engineering and Importing Company desires to contact a manufacturers' Agent to sell well established product with ever increasing sales; alternatively able control Victorian Branch Office on remunerative commission basis. Electrical and steam knowledge essential. Write to Ref. 8201, c/o "The Australasian Manufacturer."

**STEEL FOR SALE:** Sydney firm has for sale 8 ft. of 4 1/2 in. dia. Bohler E.B.K. Steel. Write to Ref. 8202, c/o "The Australasian Manufacturer."

**CONCRETE ROOFING TILE MOULDS:** Firms manufacturing moulds for the production of concrete roofing tiles are requested to write to Ref. 8203, c/o "The Australasian Manufacturer."

**STEEL TUBING FOR EXCHANGE:** Melbourne firm wants in quantity up to 5,000 ft. of 1/2 in. by 16 gauge solid drawn steel tubing. They will exchange a similar amount of 1 in. by 16 gauge solid drawn steel tubing. Firms interested in this inquiry will be given the name and address of the firm on writing to Ref. 8204, c/o "The Australasian Manufacturer."



## "DRILLAIR" CLAMP The Modern Complement of every DRILLING MACHINE

in the Tool Room—for Repetition Work  
for R. & M.

Holds the job firmly  
Quickly set to any height and angle  
Simplifies jig design  
Prevents accidents

**ACTA PTY. LTD.**

15 O'Connell Street, Sydney, N.S.W.  
Phone: BW 7431

**TRADE WITH VENEZUELA:** An inquiry has been received from an exporting firm located at Caracas, Venezuela, South America, in which they say they desire to contact Australian manufacturers interested in this market. The name of this firm will be supplied on application to Ref. 8205, c/o "The Australasian Manufacturer."

**POWER TAKE OFFS AND SQUARE TUBING WANTED:** N.S.W. firm desires to locate a supplier of 4 (only) 90 deg. x 1 1/2 in. x 6 Spline Power Take Off and 4 (only) 90 deg. x 1 1/2 in. x 6 Spline Power Take Off to suit tractors. They also require 100 ft. 1 in. I.D. Square Tubing. Write to Ref. 8206, c/o "The Australasian Manufacturer."

**SPOT WELDER WANTED:** Inquirer wants to purchase one "E.M.F." Spot Welder, 7 to 10 K.V.A. Automatic. New or Second-hand. Write to Ref. 8192, c/o "The Australasian Manufacturer."

**WOODEN TENT PEGS AND HAMMER HANDLES:** Firms manufacturing Wooden Tent Pegs and Hammer Handles are asked to write to Ref. 8193, c/o "The Australasian Manufacturer."

**CUPBOARD VENTILATORS, DRAFT STOPS AND SHOWER CIRCLES:** The manufacturers of "Inserta" Cupboard Ventilators, "Russack" Draft Stops and C.P. Shower Circles, are requested to

## F.M.C. CHAINS

FOR whatever purpose they are required you will gain greater efficiency and additional security by using F.M.C. Australian-made chains. Skilled workmanship, modern machinery and the most rigid standards of testing make F.M.C. Chains equal to the world's best.

**FALKINER  
MACHINERY  
COMPANY**  
PROPRIETARY LIMITED  
**CHAIN MANUFACTURERS**  
WELLINGTON RD., WOOLLOONGABBA  
BRISBANE Q. Phone J4237 J2518.

Representatives in all Capital Cities

## MANUFACTURING ENGINEERS

COMPRESSION MOULDERS, TOOL AND DIE MAKERS,  
PRESS WORK, Etc.

ACME ENGINEERING CO.

DREWERY LANE, MELBOURNE. Cent. 2594.

CONSULTANT AND ADVISER on all matters connected with

## CUSTOMS TARIFF

Cases prepared and submitted to the Tariff Board

C. F. COMERFORD, Customs Adviser

18 QUEEN ST., MELBOURNE. 'Phones: MU 4888, MU 2454.

write to Ref. 8194, c/o "The Australasian Manufacturer."

**PLASTIC TUBING WANTED:** Sydney manufacturer urgently requires clear transparent plastic tubing, 3 in. O.D. x 2½ in. I.D., in lengths of 2½ and 5½ inches. Write Ref. 8195, c/o "The Australasian Manufacturer."

**MUFFLE FURNACE:** W.A. organisation desires to obtain a second-hand small Muffle Furnace or an annealing oven, electrically heated, with instruments up to 1,000 degrees centigrade. The muffle to be in the vicinity of 12 x 12 x 12 in. Firms interested write Ref. 8196, c/o "The Australasian Manufacturer."

**CENTRIFUGAL FILTERS:** The manufacturer or Agent for Lang's Centrifugal Filter is requested to write to Ref. 8197, c/o "The Australasian Manufacturer."

**PYROMETERS:** A manufacturer using Calciners and other types of furnaces, requires Pyrometers, and would be pleased to receive priced catalogues of plain, recorder and thermocouple types. Address will be supplied on application to Ref. 8198, c/o "The Australasian Manufacturer."

**FRUIT JUICES AND SOFT DRINKS:** A South African manufacturer of fruit juice extracts who is migrating to Australia wishes to establish a cordial and soft drink extracts factory in this country and is interested in partnership or other form of business association with a similar existing establishment. Further particulars on application to Ref. 8199, c/o "The Australasian Manufacturer."

**PREFABRICATED PIPES:** A Dutch firm which specialises in the fabrication of steel, copper and other piping for installation in ships, oil refineries, factories, etc., wishes to engage in the production of such commodities in Australia and is interested in partnership or other form of business association with a similar existing establishment in this country. Write Ref. 8200, c/o "The Australasian Manufacturer."

**CRUSHING ROLLS WANTED:** Sydney manufacturer requires urgently set of crushing rolls. Please supply details of size, make and price to Ref. 8191, c/o "The Australasian Manufacturer."

**SPRING STEEL WANTED:** Brisbane firm wants to purchase quantities of 7/16 in. Spring Steel in widths of 2 in., 2½ in., or 2¾ in., in lengths of 2 ft. 6 in. upwards. Write to Ref. 8178, c/o "The Australasian Manufacturer."

**AGENCY AVAILABLE — ELECTRIC PETROL AND HAND-OPERATED MOBILE LORRY LOADERS:** South Australian firm is interested in appointing Agents in each State for the distribution of a range of electric, petrol or hand operated mobile lorry loaders and cask lifters of British manufacture. Write Ref. 8185, c/o "The Australasian Manufacturer."

### SUCCESSFUL PIPE TENDER.

The Brisbane City Council Stores Board has recommended acceptance of a £138,978 tender by Rocla Pipes Ltd., for pre-stressed concrete pipes. The pipes are for the high level sewer diversion main at Pinkenba.

## CHEMICAL SERVICE TO INDUSTRY

CHEMICALS SUPPLIED BY ICIANZ ARE BASIC RAW MATERIALS FOR INDUSTRY.

THE RESOURCES OF ICI ARE CONTINUALLY DIRECTED TOWARDS NEW CHEMICALS. WIDE KNOWLEDGE AND EXPERIENCE ARE APPLIED TO RESEARCH AND DEVELOPMENT.

### DO ANY OF THESE PRODUCTS INTEREST YOU?

**"ALLOPRENE":** Chlorinated rubber product which is available in a number of grades, making a wide range of viscosities in film forming preparations achievable. "Alloprene" films are very resistant to corrosion by chemicals.

**"CERECOLOR":** Chlorinated hydrocarbon plasticiser for "Alloprene". It dissolves readily in solvents, and is easy and safe to handle.

**SOLVENTS:** A number of interesting solvents on our Developmental Range include Dimethylcyclohexanol and Tetrahydrofurfuryl alcohol. These are available in quantities sufficient for pilot plant studies.

If you use chemicals in your business consult—

IMPERIAL CHEMICAL INDUSTRIES OF AUSTRALIA & NEW ZEALAND LTD.

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I.C.I. (N.Z.) Ltd., Auckland and Wellington, New Zealand.

AGENTS: Elder, Smith & Co. Ltd., South Australia and Western Australia.  
Chemical & Textile Agencies Pty. Ltd., Tasmania.

SUN-4-X-407

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A SIMPLE MACHINE CAPABLE OF A WIDE RANGE OF OPERATIONS

Wood and Metal Turning . . . Circular Sawing—Sanding, Grinding, Polishing . . . Wood and Metal Boring . . . Height of Centres, 4in. Length of Barbed, 34in. Diam., 1½in. Distance between Centres, 38in. (with saw table removed). Extension beds available. Diam. of Circular Saw, 6in. Spindle Speeds up to 4,500 r.p.m. Machine supplied complete with Saw Table No. A42, V-belt, Face Plate, T. rest, Dog Centre, Tail Centre.

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PTY. LTD.

BIRMINGHAM STREET, ALEXANDRIA, N.S.W.

MU 2708—MU 2834.

## G. E. CRANE & SONS LTD.

33 PITT STREET, SYDNEY, N.S.W.

*Manufacturers of*

### ALUMINIUM

Sheet, Strip, and Circles, Aluminium Alloy Ingots.

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Sheet, Strip, and Circles, Copper Sheathing.

BRASS MUNTZ'S METAL & SILICON COPPER ALLOYS  
IN SHEET, STRIP, AND CIRCLES, NAVAL BRASS  
SHEETS AND SHEATHING.

LEAD — Sheet, Pipe, Damppcourse, etc. PURE TIN — Sheet and Pipe.

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Collapsible Tubes for Dentifrices, etc.

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SHEET METAL PRODUCTS FOR BUILDING TRADE.

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SYDNEY:

#### BRISBANE:

C.O.N. Pty. Ltd.,  
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*Bandsaws*

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## NEW! — QC — Type S8

Non-electric Permanent  
MAGNETIC CHUTE SEPARATOR



More Powerful  
Easier to Clean

STOPS  
TRAMP IRON  
before trouble  
starts

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TEXTILE MILLS  
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Other products include: Non-electric Permanent Magnetic Pulleys, Overhead-type Separators, Magnetic Chucks, Permanent Magnets for Industry in ALNICO and MAGNIMAX.

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West Australia: Allan Watson, 35 Barrack St., Perth. Tel.: B 2596.



## Arkon FLOW INDICATOR

IS THE COOLING WATER CIRCULATING?  
IS THE BEARER GETTING THE OIL?



The oil or water spins a chromium-plated ring under a glass dome. If the flow stops, the ring stops spinning and warns you that something has gone wrong.

### IMMEDIATE DELIVERY

N.S.W.: H. G. Thornthwaite & Co., 43 Margaret St., Sydney (BX 3603). VIC.: Harrocks Roxburgh Pty. Ltd., 517-9 Little Collins St., Melbourne. S.A.: E. Treiving & Son Ltd., Light Square, Adelaide. Q'LAND: Parbury, Henty & Co. Pty. Ltd., 106 Edward St., Brisbane. TAS.: Douglas & Fraser, 41 Paterson St., Launceston.

## CUBICLE TYPE LOW TENSION SWITCH-BOARDS.

Australian General Electric Pty. Ltd. recently received an order for a switchboard for use at the Metropolitan Fresh Food and Ice Co. Ltd., of Sydney. The switchboard is of the fixed cubicle type, with six panels, housing air circuit breakers ranging from a 4,000 amp. EHF type V.J. down to the well-known A.G.E. type A.E.1 breakers for the feeder circuits.

This type of switchboard is particularly popular with food manufacturers on account of its clean appearance, and the fact that it may be finished in any colour. Similar switchboards have also been installed for several other large food and confectionery manufacturers in Sydney.

## GOVERNMENT RESEARCH IN GREAT BRITAIN.

Reports on scientific and technical research carried out on behalf of the British Government during the war are being published by His Majesty's Stationery Office. It has long been realized that many of the results of this research would be of value to industry and to scientists. The Ministry of Supply and the Technical Information and Documents Unit of the Board of Trade are now preparing a series of volumes of selected reports. Each volume will be concerned with one particular subject and it is hoped that the series will eventually cover a wide industrial field. The first seven volumes of the series deal with Plastics, Paints, Protection and Electrodeposition of Metals, Textiles and their Testing, Servomechanisms, Strength and Testing of Materials, and Adhesives.

The following volumes have already been published by H. M. Stationery Office at the (English) price given in brackets:—Vol. 2, Paints (5/-); Vol. 4, Textiles and their Testing (6/-).

Copies may be seen at Defence Research Laboratories Libraries

at Maribyrnong, Victoria; Alexandria, N.S.W.; and Finsbury, S.A., and at Head Office Library, the Commonwealth Scientific and Industrial Research Organization, 314 Albert Street, East Melbourne, while they will be available also at the Library of the Division of Industrial Development, Department of National Development, 203 Collins Street, Melbourne.

## GENERAL ELECTRIC COLOUR FILM.

The General Electric Company of America is concerned with 120 plants in 90 cities; it has 200,000 employees, for whom its annual wage bill is over 660,000,000 dollars. Net yearly sales amount to more than 1,600,000,000 dollars; taxation, 170,000,000 dollars (three times the amount paid to shareholders); and upkeep and additions to machinery, over 100,000,000 dollars per annum.

The activities of such a vast organisation are of importance not only to its shareholders (who number a quarter of a million) and to its customers, but to the world generally. Only a very small proportion are able to attend the annual meetings at Schenectady, and although during 1948 more than forty meetings were held in different parts of America, this was still far from adequate. For that reason, the management of General Electric arranged for a 16 mm. sound-movie film, "G.E. in 1947" to be produced. The film, which is in technicolour, gives a full interpretation of the objectives and achievements of the Company during that year, and presents the Annual Report and Balance Sheets. It was screened in Sydney before a group of managers and executives of Australian organisations, and is for a limited period in the possession of General Electric's representatives in Australia. Australian General Electric Pty. Ltd. It is available for loan to industrial and technical organisations, subject to screenings already booked. Applications should be addressed to the A.G.E. office in the nearest capital city. The running time is approximately 45 minutes.

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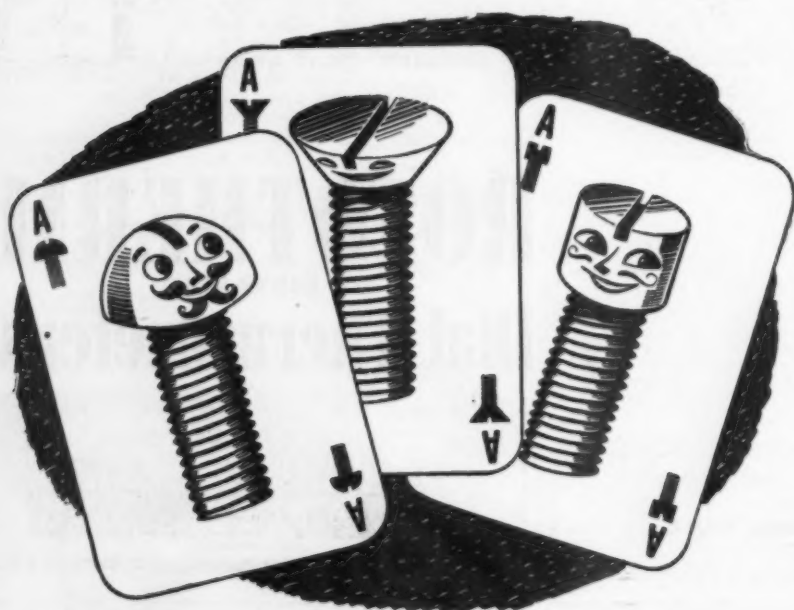
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## LIGHTNING ARRESTERS.

In the past, General Electric lightning arresters have been widely used in Australia by supply authorities for the protection of their distribution systems. Owing to the dollar situation, G.E. arresters are no longer procurable, but their place may be adequately filled by "Metrosil" surge diverters. These are manufactured in England by the Metropolitan Vickers Electrical Company Ltd., represented in Australia by Australian General Electric Pty. Ltd.

Although they are named "surge diverters" instead of the more widely used "lightning arresters", there is in fact no difference in their function. "Metrosil" discs, which are used to provide voltage control, are similar to the G. E. Thyrite, and there is every reason to believe that these lightning arresters will prove as popular as the Thyrite type. The first large order for "Metrosil" Surge Diverters has been placed by the Clarence River County Council in N.S.W.

## RANGES FOR THE ROYAL AUSTRALIAN NAVY.

A further order has been received by Australian General Electric Pty. Ltd. for ranges for the R.A.N. This order consists of a number of sets of ranges, each set comprising an Officers' Galley Range, a 100-men Range and an extra-heavy-duty Marine Galley 200-men Range.

All ranges are to be finished in pearl grey porcelain enamel, with stainless steel door panels and liners. They are designed with special rolling bars or "fiddies", which are attached to the hob to prevent utensils leaving the range in rough weather. Overflow trays are also provided below the hotplates, and a spillage channel surrounds the hob. A guard rail is incorporated to prevent accidental contact with the hot hob, and to act as a steady support for the cook.

The general construction will be similar to that of ranges previously supplied by A.G.E. for "Battle class destroyers."

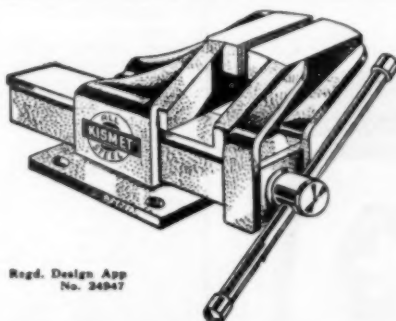
## EMPLOYEES NOW NUMBER 2½ MILLION.

According to the Commonwealth Statistician (Dr. Roland Wilson) the number of non-rural wage and salary earners employed in Australia was a record at 2,528,200 in March, 1950.

Of the total, 1,876,400 were employed in private industry and 649,800 by governmental authorities.

Government employees in February, 1950, totalled 650,100.

Private industry employees numbered 11,900 in February.



Regd. Design App  
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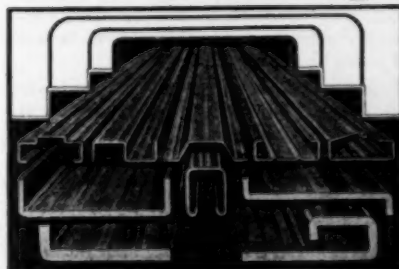
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#### GENERATING PLANT FOR SUGAR MILLS.

Amalgamated Sugar Mills Ltd. have ordered from Australian General Electric Pty. Ltd., a B.T.H. 1,500 kW geared back-pressure turbo-alternator set—the second generating set which they have bought of British Thomson-Houston manufacture for use at their Fleystowe Mill, Mackay, Q.

The set is designed for initial steam conditions of 180 lb./sq. in. gauge pressure 490 deg. F. total temperature. It will be capable of an increased rating of 1,800 kW when the steam conditions rise, as they may at times, to 200 lb./sq. in. gauge and 540 deg. F. total temperature.

Highly satisfactory performance of the original set is reflected in this order for the new equipment.

#### REVALUATION OF THE POUND.

The Associated Chambers of Manufacturers of Australia, has sent the following protest to the Prime Minister on revaluation:

"This organisation, representing 15,000 manufacturers, cannot emphasise too strongly its opposition to any alteration in the present exchange rate against sterling.

"We desire to point out that such action would cause grave repercussions on Australian industry from a national economic viewpoint.

"We had repeatedly drawn previous Governments' attention to the fact that artificial currency exchanges do not put value back into the pound. The only real constructive approach is through output and reduced Government spending."

#### INDUSTRIALIST ON AUSTRALIA'S FUTURE.

On his return to the United States after his recent visit to Australia, Mr. Robert S. Rheem declared that Australia is one of the world's brightest economic spots. Praising relations between management and labour at his company's factories in Sydney, Melbourne, Brisbane, and Fremantle, he added: "If you understand the Australian temperament, you can easily get along with it".

It is of special significance to recall that twenty-five years ago, Mr. Rheem and his two brothers started a galvanising factory in a wooden shed near San Francisco. To-day, their company has eight factories in the United States, and ten factories in seven overseas countries.

#### OLYMPIC EXECUTIVES RETURN.

After a business visit to Great Britain and the United States, Sir Frank Beaurepaire, chairman of directors of Olympic Tyre and Rubber Co. and Olympic Cables, has returned. Mr. Charles Grainger, the technical director of both companies, returned with Sir Frank.



## A Personal Matter...

● The Sydney County Council Electricity Undertaking is controlled and staffed by men and women who have homes of their own . . . men and women who know and are able to appreciate and understand the problems, joys, difficulties and pleasures of home-life. Because this is true they are able to apply their understanding and experience to their everyday relationships with the people of our great city.

When you visit the headquarters of the Sydney County Council at the

Queen Victoria Building or any of the Council's suburban offices, you may rest assured that you will at all times receive friendly and helpful advice . . . advice which is personal as well as expert.

These are difficult times for users of electricity in every field and it is fitting therefore that the organisation which supplies your electricity should be actuated by a sympathetic understanding of your difficulties and problems.

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## New Magnetic Plug for Engines

### Lisle Drain Plug Now Being Manufactured in Australia

Now and again there appears on the market an invention so simple, so universal in its application, and so dramatic in its usefulness as to make everyone ask the question, "Why didn't I think of that!"

The perfect example of this is the Lisle Magnetic Drain Plug. Nothing more nor less than an oil plug of similar dimensions to the drain or fill plug on any type of oil lubricated machine, the Lisle Magnetic Drain Plug has anchored within its body a powerful permanent magnet.

Extending into the engine, sump or housing, and continuously contacting the circulating oil, this magnet grasps and firmly holds all harmful ferrous particles such as iron and steel chips which play havoc with moving parts. Removal of the plug from its socket at regular intervals automatically withdraws the attached particles which are then stripped from the magnet.

**B**EING used extensively to lengthen the life of bearings, gears and moving parts on almost every conceivable type of machine, Lisle Magnetic Plugs may also be used to great effect in hydraulic lines.

While the manufacture in Australia at present does not cover, by any means, the full range of uses for this small but important unit, in America their use has become mandatory in a great many branches of industry.

In addition to preventing wear and breakdowns by eliminating steel slivers and iron splinters from the lubricating system of engines, magnetic plugs are valuable in that the appearance of an unusually large number of particles on regular inspection serves as a warning signal against potential trouble.

In transport vehicles, and particularly in aircraft engines where mechanical breakdowns may have such serious consequences, Lisle Magnetic Plugs are being adopted enthusiastically.

Wright engines as used in "Constellation" Aircraft, Caterpillar Tractors, Gar Wood Hydraulic Pumps and Carrier Corporation refrigerating machinery, represent a fraction of the well-known American users, while the automotive field offers the following names among those which employ the Lisle Magnetic Plug: Buick Motor Company, Chrysler Corporation, Diamond T. Trucks, General Motors Truck & Coach Co., Federal Motor Truck Co., Nash Motor Company, White Trucks, etc.

Not much dearer than ordinary plugs, magnetic plugs save, it is

claimed, many times their initial cost in the economies they make possible. Because of their protective action in reducing abrasive wear, they cut down maintenance costs, reduce failure of expensive machine parts and assure longer service.

In locating a magnetic plug it is only necessary to keep three factors in mind. The plug should be located so that the magnet poles will come in contact with the oil during the operation of the unit. It should be located where active

but generally speaking the magnets will attract iron and steel particles within a range of from  $\frac{1}{16}$  in. to  $\frac{1}{2}$  in. The effectiveness of the plug lies in the fact that such particles are brought within this range because of the agitation of the lubricant by gears or in normal circulation.

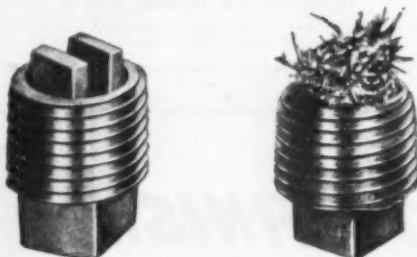
Once trapped, these slivers of metal are held until the plug is removed and cleaned, which is usually done during necessary lubrication changes.

Even in heavy oils, these plugs, it is said, are effective since the agitation by gears tends to bring iron and steel particles within pulling range of the magnet. Provided plugs are properly located they will remove all ferrous metal held in suspension. Any metal beyond their range must be so large or so heavy as to lay in the bottom of the sump and is, therefore, harmless.

While the magnet will not attract brass, bronze, aluminum or babbitt, these metals are softer and are not nearly as abrasive or destructive to bearings and gears as iron or steel.

The threads on all pipe size plugs are made to commercial tolerances permitting the small end to project one thread beyond the end of a standard thread gauge or come one thread short of extending to the end.

The Lisle Magnetic Plug is manufactured under licence in Australia by Aviation Manufacturing Co. Pty. Ltd. Sole distribution is by Brown & Dureau Ltd. (Automotive Division) through NASCO. The plug is available at all garages and service stations.



Unretouched photographs showing two views of the same Magnetic Plug. Photo on left was taken before plug was installed in a 1940 Chevrolet transmission. Photo on right was taken upon removal from the car after 1,000 miles test run. Note the accumulation of metal cuttings captured by the Magnetic Plug.

This is particularly so where ball and roller bearings are employed, as metal cuttings working their way inside the space between rolling surfaces and the raceway, place the equivalent of an overload on the bearing, usually resulting in noise and failure. Magnetic plugs prevent such damage by trapping the particles as soon as they appear.

Lisle Magnetic plugs will operate efficiently in either the oil level or drain position of an assembly. As both these plugs are removed periodically to check oil level or for draining, this offers a convenient time to remove cuttings from the magnet.

circulation takes place. It should be located where it can be serviced conveniently.

The magnets used in all standard plugs are made of 17% cobalt steel, heat treated to rigid standards to give them the maximum amount of residual strength and coercive force. All standard magnets used in Lisle Magnetic Plugs are horseshoe shaped.

Because of the proximity of the two unlike poles, the magnetic field of force is greatly increased. Under normal conditions, magnets used in these plugs lose less than 10% of their strength during a period of ten years' service.

The pulling power of the magnets varies according to their size,



## Multi-Drilling on Automatics

**New spindle locating attachment allows an operation to be performed by an independent live attachment while the component remains stationary**

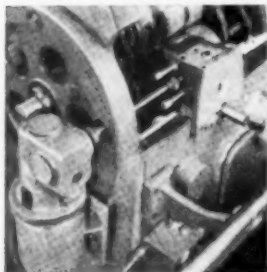
Designed to locate the spindle at the loading station of their multi-spindle chucking automatics and lock it in position for a portion of each cycle prior to unloading, a new attachment introduced by a British firm allows an operation, such as drilling or milling, to be performed by an independent live attachment while the component remains stationary. It provides that this secondary machining operation is positively related to shape of the component.

**I**MMEDIATELY after indexing, the driving clutch of the spindle at No. 5 station is disengaged and the brake applied to bring the spindle to rest for load-

ing the spindle stationary in a positively located position. On completion of the secondary machining operation and subsequent unloading and loading, the spindle

The engaging gear unit, which is mounted on the side of the index casing in a position adjacent to the air cylinders consists essentially of a cast aluminium

housing in which a countershaft connects with the flexible coupling drive. A loose sleeve is carried on the countershaft, and a sliding dog keyed to the countershaft is arranged to slide in and out of engagement for intermittent transmission of the drive to the sleeve. Keyed to the sleeve is the engaging pinion which is arranged to slide longitudinally into mesh with the ring gear mounted on the spindle.



Auxiliary slow-motor drive from a fractional horsepower motor and reduction gear rotates the spindle at No. 5 station to a position for positive location. Slow-motion drive is engaged after indexing, disengagement of the spindle drive clutch and release of the spindle brake.

ing in the usual manner, but by means of a special cam fitted on the standard cam-drum, the brake is released, leaving the spindle free to revolve. An auxiliary slow-motion drive is then engaged to rotate the spindle to a position where a detent slot engages with a locating dog, the action of which disengages the slow-motion drive and leaves

clutch is re-engaged in the normal way in preparation for beginning the next cycle of the machine.

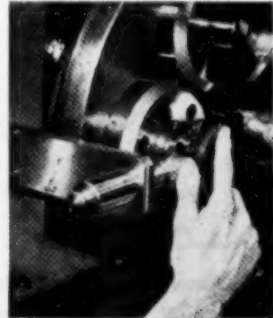
At the rear of each spindle, a ring gear transmitting the slow-motion drive, and a locating ring for receiving the locating dog are together bolted and dowelled to the outer member of the air cylinder actuating the draw-bar of the chuck.

Mounted on the end of the index casing of the machine is a fractional-horse-power motor which, through a worm and wheel reduction gear unit and flexibly coupled shaft, drives the engaging gear unit of the attachment.

housing in which a countershaft connects with the flexible coupling drive. A loose sleeve is carried on the countershaft, and a sliding dog keyed to the countershaft is arranged to slide in and out of engagement for intermittent transmission of the drive to the sleeve. Keyed to the sleeve is the engaging pinion which is arranged to slide longitudinally into mesh with the ring gear mounted on the spindle.

The action of the mechanism is governed by a disc cam, mounted on the end of the existing cam-shaft, and carrying on each side masking segments which operate two vertical spring-loaded bell-crank levers located on a bracket inside the walls of the index casing. One bell-crank lever carries a locating dog shaped in the form of a broad wedge, and when the lever is released by the cam, this dog rides on the periphery of the locating ring on the spindle. The other bell-crank lever is so arranged that when released by the cam it withdraws a restraining yoke and allows the slowly running pinion to move longitudinally, under spring pressure, to engage the ring gear on the spindle.

Thus the spindle is caused to rotate until the wedge-shaped locating dog engages with the detent slot in the locating ring on the spindle. This further movement of the lever carrying the locating dog, actuates a lever and yoke mechanism to disengage the sliding dog from the sleeve on

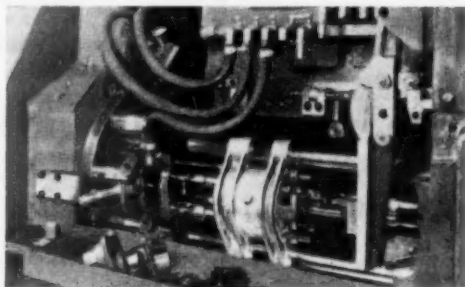


Locator plate is used to position component in correct radial relation to the spindle when loading. Device retracts clear of spindles during machining cycle.

gaged from the ring gear on the spindle; the locating dog is withdrawn from the detent slot in the locating ring; and the sliding dog re-engages with the sleeve on



Components are mounted on a mandrel pressed into the splined bore. Taper on mandrel is drawn back into the chuck adaptor by air-operated bar mechanism.

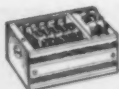


Independent four-spindle drill head is free to slide on two guide bars. Drilling is done in idle time immediately prior to unloading.

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the countershaft when the two bell-crank levers are subsequently re-set by the cam upon conclusion of the machine cycle and immediately prior to spindle indexing.

The production of flange couplings for universal joints provides, says "The Machinist", an interesting example of the use of this attachment on a 6 in. five-spindle chucking automatic. What would otherwise have been free time at the loading station, is used to perform a multiple drilling operation normally done as a subsequent operation on a separate machine.

The long boss of the component is skimmed, the bore drilled through and the splines broached before loading into the automatic.

First four spindle positions of the automatic are used for roughing and finishing the large bore diameter, taper boring, rough and finish facing both sides of the flange, and recess forming the counterbore.

The fifth spindle position is used for unloading and loading, but since this operation occupies only a part of the time available, opportunity is taken to drill the four holes in the flange before unloading the component by using the attachment described. An independently operated four spindle drill head, with spring-loaded guide bush plate engaging with the spigot diameter of the component, is introduced for this purpose.

The drilling attachment is mounted on two substantial guide bars, on which it is free to slide. Link-operated toggles on the drilling attachment engage with the pentagon centre block to provide a feed stroke.

Then at a predetermined point, on completion of drilling, the toggles disengage and the attachment is withdrawn independently of further movement of the centre block.

The drilled holes are required to be in relation to the profile of the flange and it is therefore necessary to ensure not only that the workspindle at the drilling station is stopped in a constant position, but also that the forging is loaded in the same relative position.

To achieve this, each component has a mandrel forced into the splined bore with a slight interference fit, a single key locating in one spline transmitting torque. Fitting and subsequent removal of the mandrels is carried out on a simple hand-operated arbor press, sufficient mandrels being available to enable the operator to have a component mounted on a mandrel always ready for loading into the spindle.

The rear of the mandrel is in the form of a 16 deg. taper to mate with the female taper of the adaptors fitted to the machine spindles. The mandrel is drawn back into the spindle by the air cylinder draw bar, to which it is connected by means of bayonet fitting. The taper of the mandrel provides sufficient grip to resist the torque of the machining operations.

The mandrel carrying the component is positioned in correct



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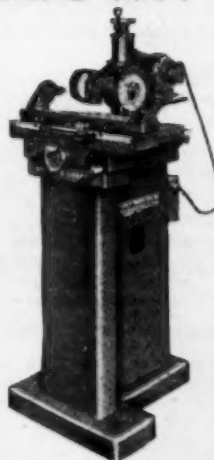
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## NEW ELECTRICAL TRACTION COMPANY.

The registration in England in November last of the Metropolitan-Vickers-Beyer. Peacock Company Limited brings together two companies of outstanding experience and prestige in the electrical traction field. The Metropolitan-Vickers Company has a record of fifty years of service, while the Beyer Peacock Company has been established as manufacturers of steam locomotives since 1854.

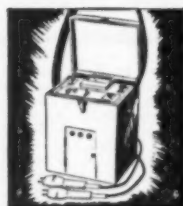
The functions of the new Company will include the manufacture of the bodies, bogies and mechanical parts for electric and Diesel electric and the new gas turbo-electric locomotives. The first order, for fourteen, 3,000 volt, electric locomotives for the Brazil railways, has already been received.

Growing traffic problems and the need for faster transport point the way to increased straight electrification, Diesel electrification, and the eventual adoption of gas turbo-electric locomotives, the first of which is expected to be in operation in Britain towards the end of the year. Recognition of this coming change in motive power for railways has prompted these two companies to get together to build up an organisation which should prove second to none in the traction field.



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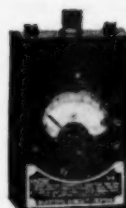
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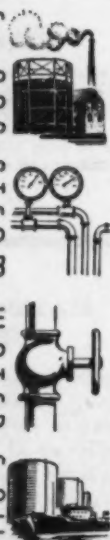


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## TARIFF BOARD INQUIRIES.

The Tariff Board proposes to commence a programme of public inquiries in Sydney and Melbourne, probably in August, 1950. The following matters may be included in the programme:—

**Carpenters' Chisels**—What rates of duty should be imposed on carpenters' chisels which are now charged with duty under Tariff Items 219(B) and 449(A)(1).

**Cloth Cutting Machines, Electrically Operated**—What rates of duty should be imposed on electrically operated cloth cutting machines imported into the Commonwealth of Australia.

**Alarm Clocks**—What rates of duty should be imposed on alarm clocks classifiable under Tariff Item 318(A)(3).

**Plastic Sheet**—What rates of duty should be imposed on printed, polished or embossed plastic sheeting imported into Australia.

**Drums**—What rates of duty should be imposed on drums at present classified under Tariff Item 362. (In Sydney only, the inquiry having already been held in Brisbane and Melbourne.)

**Tractors**—Question of the necessity for continuing to assist the production of tractors in Australia and, if so found, the manner and extent of such assistance. (This inquiry will relate only to tractors over 80 horse-power.)

**Linseed and Linseed Oil**—(1) Whether the growing of flax for linseed should be encouraged and, if so, whether Government assistance should be afforded to the cultivation of linseed and the production of linseed oil; and (2) In the event that Government assistance is recommended what form should it take.

**Tool Tips**—What rates of duty should be imposed on tool tips having a basic composition of tungsten classifiable under Tariff Item 208(A)(2).

**Metal Working Machine Tools**—What rates of duty should be imposed on machine tools classifiable under Tariff Item 174(M) (177).

**Synthetic Resins**—(a) Whether the following goods, viz.: Resin Esters, modified phenol formaldehyde resins, maleic resins and

alkyd resins in dry form; Alkyd resins in viscous form; and alkyd resins, urea formaldehyde resins, phenol formaldehyde resins, resin esters and maleic resins in solution form; should be removed from the provisions of entry under Tariff Item 232(E)(1). (b) What rates of duty should be imposed on such goods if they be removed from the provisions of entry under Tariff Item 232(E)(1).

**Spirit Levels**—What rates of duty should be imposed on spirit levels classifiable under Tariff Item 219(B) and Tariff Item 303(A).

**Synchronous Motor - operated Electrical Time Switches**—What rates of duty should be imposed on synchronous motor-operated electrical time switches at present classified under Tariff Item 179(B)(5).

**Flow Meters**—What rates of duty should be imposed on meters, mechanically operated, for recording the flow of petrol and oil and other liquids at present classified under Tariff Item 176(K)(2)(b).

The programme of inquiries, when finally arranged, may not include some of the matters listed above and may cover matters other than those mentioned.

## A.C.M.A. MEETING.

The next meeting of the Associated Chambers of Manufacturers of Australia, Federal Executive will be held in Brisbane on Tuesday, August 29th.

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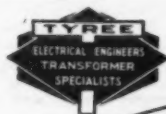
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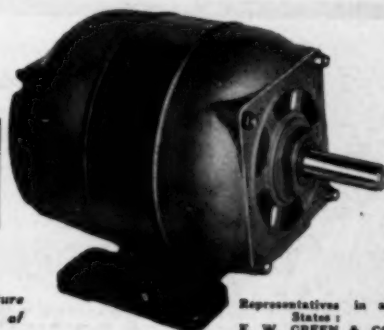
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## The Selection of Superfinishing Abrasives

Size of grit, hardness of bond, pressure, work speed, lubricant and material and abrasive hardness, have a bearing on the quality of finish obtained

Superfinishing operations are most successful when the abrasive stones are selected carefully. Kind and size of abrasive grit, nature and hardness of the bond material, and size and shape of the stones have controlling influences on the success of the operation.

The stones are made from the same grit materials and essentially the same bonds as are grinding wheels, but softer bonds and finer grits are employed. Vitrified bonds predominate, although in a few cases resinoid or shellac bonds prove useful. Both aluminium oxide and silicon carbide grits are used, in sizes from 120 to 600 mesh. Even finer grits (200 mesh and finer) are sometimes used to produce finishes of 1 mu. in. or less, as on jewellers' rolls.

IN choosing an abrasive to produce a given surface quality, these factors must be considered:

(1) The kind of grit most suitable for the material, (2) size of

grit needed for the surface to be produced, (3) kind of bond to be employed, and (4) hardness of the bond.

The choice between aluminium

oxide and silicon carbide is not difficult. Aluminium oxide is standard for superfinishing steels, and silicon carbide is generally best for cast iron and nonferrous metals. There are but few exceptions to this rule. Aluminium oxide is faster cutting and better wearing and will produce a beautiful lustre on most steels, but it is inclined to have a harsh cutting action on the softer metals, particularly on small-diameter work.

While slower cutting, silicon carbide is often employed on steels softer than about 30 Rockwell C, and for diameters under about  $\frac{1}{4}$  in. Also, as silicon carbide can be made in finer grits in vitrified bond than can aluminium oxide, it can produce ultra-fine surfaces of 11 mu. in. or less on hard steels.

Selection of the correct grit size is seldom a serious problem. Most superfinishing is preceded by a grind finer than 30 mu. in. rms, with a desired final finish of 3 mu. in. or less. For these average operations, a 600-mesh abrasive has generally proved most satisfactory, in either kind of grit. When the final grind is rougher than 30 mu. in. rms, it may be desirable to employ a 500-grit stone in the interest of speed. This may also be true with smoother grinds when a final finish of more than 3 mu. in. rms is permissible. Grit sizes of 400 or 320 mesh may be used when a definite scratch pattern is desired for some special purpose. In some machines, where high rates of production are required—often from a turned surface—grits as coarse as 120 or 180 mesh may be used for roughing, followed immediately by 400-grit finishing.

It is not possible, writes E. L. Hemingway in "The Machinist," to predict with any accuracy the degree of smoothness that will be

obtained with a given grit size. This depends upon the pressure on the stone, the speed of work rotation, and the viscosity of the lubricant, as well as upon the grit size and bond hardness.

Selection of bond is an easy choice. Because it is faster and more reliable in its cutting action, vitrified bond is almost invariably used. While resinoid and shellac bonds produce very smooth surfaces, they have such slow cutting action that they are employed only for small diameters, usually  $\frac{1}{4}$  in. or less; some aluminium alloys; or second operations on a few difficult metals, such as brasses and soft stainless steels, on which vitrified bond stones are used for roughing.

### SELECTION OF BOND HARDNESS.

Determination of proper bond hardness has, in the past, offered more difficulty than any of the other factors involved. It has been made easier by the development of the Rockwell bond hardness test by the writer. This test can be applied with confidence on stones of 320 and finer grits. On coarser grits, it is sometimes erratic because an insufficient number of abrasive grits are contacted, yet it will be worth taking hardness readings.

Rockwell hardness tests of abrasive stones are made with a  $\frac{1}{4}$  in. steel ball and 80 kg. load. In taking a reading, the operator should not wait for the dial needle to stop, but should raise the weight arm immediately after it has bottomed. The hardness number is read from the "red" scale. This combination of weight, indenter and "red" scale has been designated Rockwell "H" by the makers of the instrument.

(Turn to page 53.)



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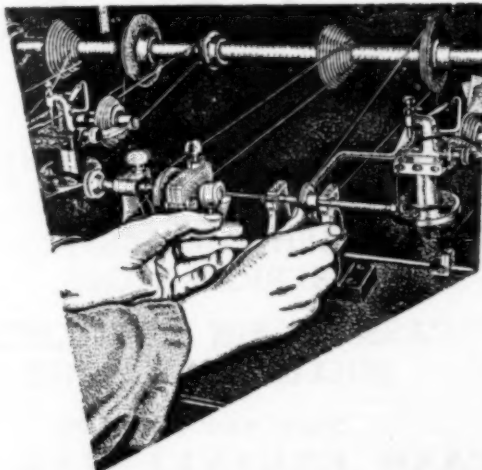
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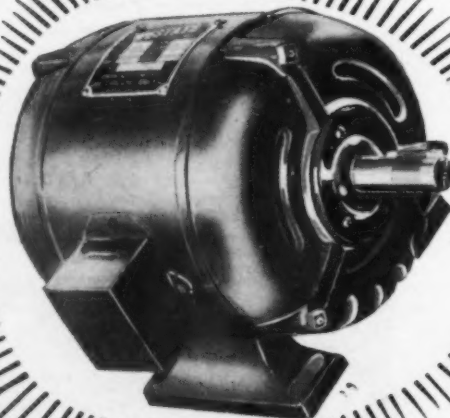
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(Continued from page 52.)

Manufactured abrasive stones cannot be made to show uniformity in hardness as is found when testing metals. Some variation will be found in the best stones. A good stone should show eight out of ten tests within  $\pm 5$  points Rockwell H of the expected reading. A little greater latitude may be allowed on soft stones—from 0 to 40 Rockwell H—but less variation should be expected on those from 60 to 80 Rockwell H.

Just as in grinding, changes in operating and work-piece conditions sometimes make necessary deviations from recommended Rockwell H hardnesses for vitrified bond stones to be used on steel parts  $\frac{1}{2}$  in. in diameter and over, usually toward a harder bond. Some examples are:

(1) Diameters of less than  $\frac{1}{2}$  in. require progressively harder bonds as they become smaller.

(2) Interrupted surfaces, such as journals with oil grooves, splined shafts, or reamers as an extreme example, require a bond hardness increased according to the degree of the interruption.

(3) Very roughly ground surfaces, which would wear a stone face rapidly, require a harder bond—perhaps 5 points Rockwell H harder than otherwise would be applied.

(4) Traversing requires a slightly harder bond than when the work is so short that traversing is not employed.

(5) Conical shapes must be super-finished with a bond hardness of 65 to 80 Rockwell H.

When employing silicon carbide stones on steels, approximately the same bond hardnesses should be used as for aluminium oxide stones.

It has not been found possible to correlate the bond hardnesses of silicon carbide stones with the hardnesses of cast iron and non-ferrous metals, as has been done with steels. As a starting point, it is recommended that a stone of 50 to 60 Rockwell H be selected for trial. Then the required hardness can be determined from the cutting action of the test stone.

#### SHAPES OF SUPERFINISHING STONES.

Cylindrical and conical shapes are finished with square or rectangular stick-type stones. These are usually supplied in five cross sections, and in six inch lengths. Some high-production operations make special shapes desirable, but the standard sticks can usually be applied to most jobs.

Two  $\frac{1}{2}$  in. x  $\frac{1}{2}$  in. stones in a

double holder are usually employed for diameters from 3 in. to 7 in., and two 1 in. x 1 in. stones for larger work. However, none of the general recommendations need be considered hard and fast, and some deviation is permissible if the indicated size is not at hand.

Superfinishing sticks are often altered from the standard shape to meet special or high-production requirements. There are two reasons for this practice:

(1) To counteract dressing of an area of the stone face by its passage over a hole or other interruption in the work.

(2) To maintain straightness in a diameter, most often when there are shoulders at one or both ends to restrict the length of the stone.

Examples of the first case might be the pinholes in a piston, or a bearing that contains splines over only a portion of its length. Such interruptions have a tendency to dress the stone face and make it act softer than the balance of its contact area. It is desirable to narrow down the face by about one-half its width at the portion which passes over the interruption.

The most common examples of the second case are crankshaft bearings straight or even slightly larger in the centre of the bearing length. All stones for this purpose are therefore considerably reduced in width at the centre of their lengths. This principle is often found valuable in maintaining straightness and evenness in surface quality when superfinishing many other cylindrical parts.

#### STONE CUTTING ACTION.

While a considerable range of cross-hatched scratch patterns (up to 80 mu. ins. rms or more) can be produced, a reflective, smooth surface is most often demanded. When the definite scratch pattern is desired for some special purpose, a continuously cutting stone of perhaps 10 Rockwell H points softer than usual is employed, with a somewhat lowered work speed. But where the smooth surface usually considered characteristic of the process is required, the stone face must undergo a certain progressive change during the short interval of the operation.

As the stone is first applied to the rough surface, it contacts only the crests of the waviness of the surface. Here unit pressure is high because of the small contact area and the grits will easily penetrate a lubricant of any viscosity to begin abrading the peaks. If the correct bond hardness is being used, the stone will, at this point,

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break down to some extent, exposing new, sharp grits to remove the peaks rapidly in comparatively large chips. The flow of lubricant has two purposes: (1) to cause more efficient cutting by the grits, and (2) to wash away abraded bits of metal and stone.

As the peaks are reduced and the entire surface becomes more smooth, unit pressure on the grits becomes less because more of them are at work over a greater percentage of contact area. It becomes increasingly difficult for the grits to penetrate into the metallic surface—and if they do not bite so deep, sufficient leverage is not exerted upon them to pry them out and thus keep the stone sharp. Instead, grits now remain in place and become progressively duller as the area of contact becomes greater and the unit pressure becomes less.

### BLACK STONE FACE.

Naturally, the dulling teeth of the stone remove progressively smaller bits of metal. Finally, these become so tiny they are immediately oxidised and are deposited as iron oxide in the pores of the stone. These deposits aid in building up a glazed face on the stone, and it is this glazing that produces an exceedingly reflective surface on the work. A black stone face at the conclusion of an operation is thus associated with correct bond hardness.

As the operation continues, the perfection in shape or conformation of both stone face and work surface finally becomes great enough that there is no longer sufficient pressure on the grit points to force them through the film pressure of the lubricant and further removal of metal ceases. Thus, if it is desired to produce the smoothest kind of surface, there is an automatic cycle of rapid stock removal, followed by a progressive production of reflectivity. Appli-

cation of the same stone to another rough part will again break down the glazed face and the cycle will be repeated.

But, for the stone to function as described, it is necessary that a close correlation be maintained between the strength of the binding-together of the abrasive grits (or bond hardness) of the stone and the hardness of the metal. A given pressure on the stone will obviously force the grits deeper into a soft metal than a hard one, and the bond, therefore, must be stronger in work on soft metals to prevent dressing of the stone when it should be glazing toward the end of the operation. A too-hard stone employed on hard steel would not be dressed fast enough to remove the grinding marks in a reasonable length of time.

The usual lubricant is compounded from a light mineral oil base, such as kerosene or mineral seal oil, together with 5 to 15 per cent. of a heavier cutting oil to regulate the viscosity—and thus the cutting action of the stone. The addition of a heavy straight mineral oil for this purpose is not satisfactory, and a water-base compound has never been found at all successful.

### ADJUSTMENT OF VARIABLES.

It is obvious that uncontrolled conditions seldom result in development of the correct cycle of stone action. Fortunately, variation in other factors can compensate for a certain amount of deviation from the exact bond hardness. Speed of work rotation and pressure on the stone are conditions usually subject to ready change. And these factors have considerable effect on the cutting action.

On parts short enough that traverse is not necessary, increasing the stone pressure, and/or reducing the speed of work rotation

(Turn to page 59.)

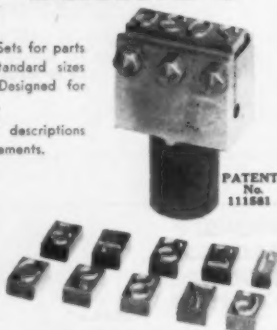
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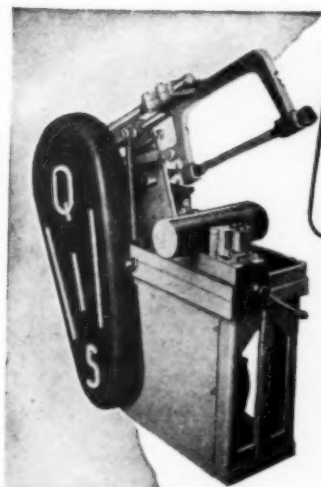
Illustrated at right: Interchangeable Type Press Holder with 1/16 in. numerals.



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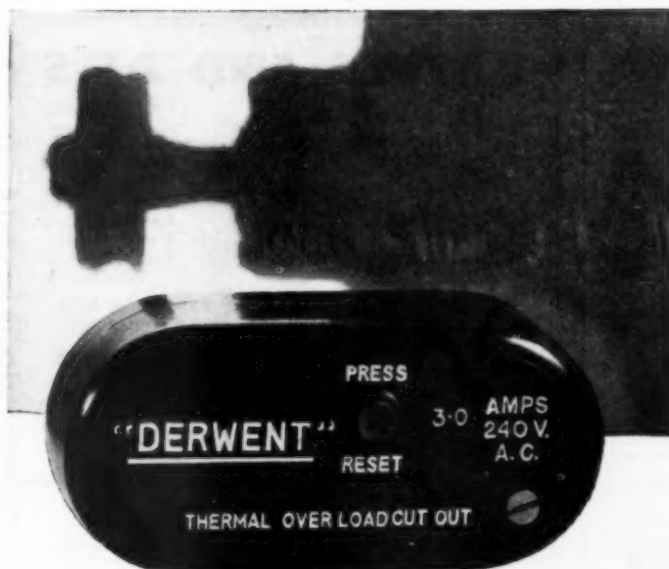
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(Continued from page 56.)

often will compensate to some extent for a stone that is slightly too hard. If neither of these changes give sufficient cut, it is a positive indication that the stone is too hard for the operation, and one of 10 points Rockwell H greater softness should be substituted.

When the cutting action is too rapid, first reduce the pressure on the stone. If this does not sufficiently reduce the cutting action, increase the speed of work rotation. But if both procedures do not produce the desired results, it is proof that the stone is too soft and one of 10 points greater hardness should be employed.

Still another means for causing a stone to cut more rapidly is to just wet the work surface, then stop the flow of lubricant. A certain amount of stone debris will thus be retained on the work to dress and sharpen the stone. After removal of the grinder marks, resume the application of lubricant. Reducing the percentage of heavy cutting oil added to the lubricant

will also cause faster cutting, but will reduce brightness of surface produced, and vice versa. However, this action usually involves more trouble than change of pressure and speed, and therefore is not ordinarily recommended.

### CANADIAN INDUSTRIAL TRADE FAIR.

#### AUSTRALIAN AUTOMOTIVE EXHIBIT.

The recent announcement by Repco Ltd. that a comprehensive exhibit of the products of its manufacturing divisions had been shipped on the s.s. "Aorangi" to the Canadian International Trade Fair, aroused interest in trade circles.

The Canadian International Fair is now regarded as one of the most important of the world's great trade displays, and attracts visitors and trade representatives from every quarter of the globe. For this reason the Commonwealth Department of Commerce and Agriculture invited Australian industry to arrange for exhibition of its products and offered financial assistance and dollar allocations to approved exhibitors.

Mr. C. G. McGrath, Director of Repco Ltd., who recently completed a tour of Great Britain, Europe and the United States, reports a growing interest in those countries in the products of the Australian Automotive Industry, and it is his conviction that this section of Australian industry has grown up and can now take its place as the equal in technique and quality, if not in volume, with its counterparts overseas.

In some aspects of this industry's development, notably in the field of automotive reconditioning, Mr. McGrath found that Australian methods and technique were in advance of those seen overseas.

The Repco group of companies has, over the past few years, steadily expanded its export trade in particular to South Africa, Malaya and India.

Mr. N. L. Joseph, manager of the Export Division, is at present in South Africa. On his arrival in that country he took charge of the Company's exhibit at the Trade Fair in Johannesburg, promoted by the South African Department of Commerce and Agriculture.

The contacts made by Mr. Joseph with buyers during the course of the exhibition has confirmed previous reports as to the excellent possibilities of Australian trade in automotive products with the Union. Mr. Joseph will spend a further four months in South Africa, and will return via Egypt, India, Pakistan, Thailand and Malaya, in which countries he will be contacting agents, appointed on a previous visit, from whom most encouraging reports and orders are steadily being received.

Because of these factors and because of the widely international character of the Toronto Fair, the Directors of Repco Ltd. accepted the offer of the Department of Commerce, and arranged for an exhibit at the Fair.

The need to conserve dollars made it necessary to arrange for the prefabrication of the exhibit in Australia, and for its subsequent dismantling, packing and re-erection at the site in Toronto.

Consisting of displays of automotive products and components wired to yellow applied panels on a green background, photographs of heavier machines, and also featuring light assemblies which were shipped separately, the exhibit provided an arresting display.

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The name panel which dominated the exhibit, consisted of a red background with the company's insignia cut out in yellow and illuminated from behind—the whole unit being specially adapted for assembly and dismantlement by the provision of studs and wingnuts to hold the sections together.

Among the parts exhibited were pistons, piston rings, cylinder liners, starter ring gears, engine bearings, valve guides, electrical test equipment, valve refacers, tension wrenches, fast battery chargers, engine reconditioning equipment, hydraulic brake parts, and trailer brake equipment, as well as photographs of all larger equipment, folders, leaflets, etc.

The products on exhibition represent the combined resources of the following divisions of Repco Ltd.:—Russell Manufacturing Co. Pty. Ltd., Patons Brake Replacements Pty. Ltd., Repco Bearing Co. Pty. Ltd., Repco Electricals, A. T. Richardson & Sons Pty. Ltd., Warren & Brown Pty. Ltd.

### PLANT FOR ALUMINIUM INDUSTRY.

It was announced recently by the Premier of Tasmania, Mr. Cosgrove, that all outstanding equipment for the construction of the aluminium plant at Bell Bay is expected to arrive before the end of the year. "The Aluminium Production Commission", he added, "has cleared the site for the main plant, called tenders for grading and foundation, and contractors have delivered steel work for the main building." Two hundred houses are to be built for aluminium workers at George Town, where the Commission has also acquired land for the erection of homes for staff engineers and clerical officers.

The plant is expected to be in operation by June, 1952, provided hydro-electric power generated by the Tasmanian Government is available by that date.

### PROCEEDS OF INDUSTRY.

A particularly interesting analysis of the proceeds of industry was given by General Motors-Holdens Ltd. in its last annual report. These analyses, which have been prepared over a period of eight years, show that the return to shareholders has been less than 10 per cent. on turnover, after setting off their losses. This means an average annual rate of a mere 1½ per cent. Labour costs, on the other hand, has risen as high as 32.7 per cent., averaging 26 per cent. over eight years. The following table shows the share of capital and of labour:—

	Labor.	Capital.
1942	27.4	2.3
1943	26.8	2.5
1944	31.0	2.5
1945	32.7	1.8 *
1946	27.26	5.62 *
1947	19.29	4.04
1948	21.44	2.89
1949	21.77	2.15

\* Loss.

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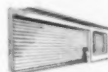
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### "FORTUNE" EDITOR DIS- CUSSES 40-HOUR WEEK.

Mr. Gilbert Burck, a senior editor of the American economic magazine "Fortune", who is on a two-month Australian assignment, declared in Melbourne recently that the huge increase in American production since the introduction of the 40-hour week ten to fifteen years ago has not come from any speeding up of the American worker, but rather from more efficient management and ever-increasing capital investment in more efficient plant. "When the American 40-hour was introduced—in a time of unemployment—workers were already working hard", he said, "and there was no call on them to work any harder. Well-organised American labour would not tolerate sweating. From what I have read of the Australian unions' case, leisure seems to be the Australian worker's first target under the 40-hour week. But the American worker saw the 40-hour week primarily as a route to overtime. American labour has always been out for cash rather than leisure. The American worker wants cash because shops are full of costly articles he wants—and can afford".

### NO DOLLARS FOR GENERAL MOTORS-HOLDENS.

It is reported from Canberra that the Federal Government has refused a request by General Motors-Holdens Ltd. for dollars for the expansion of its undertakings, the Government deciding that other requests for dollar allocations are more important.

### HIGH WORLD OUTPUT OF MINERALS AND MANUFACTURES.

The Statistical office of the United Nations announces the interesting fact that the world produced 40 per cent. more minerals and manufactures during 1949 than during 1937. The Statistical office took 1937 as the base year in calculating the index, which is for mining and manufacturing only, but includes electricity and/or gas for Australia, Belgium, Finland, the Soviet Zone of Germany, and the U.S.S.R. Production in the United States since the war has increased more than in other countries. Between 1946 and 1948, the rate of increase in world output was high and steady, rising from 107 to 135. The rate fell slightly for 1949, the index rising to 140. The index of world output, excluding the United States, recovered from 82 in 1946 to 131 in 1949, the rate, in this instance, increasing steadily each year.

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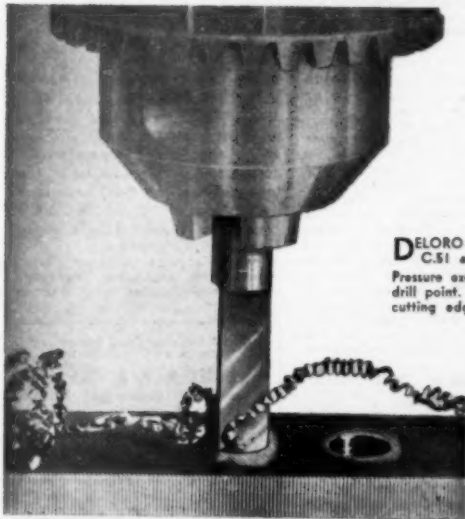
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Without previous preparation they will drill such components as hardened gears, molybdenum steel hacksaw blades, hardened armour plate, ball bearings to make gauges, hardened spring steel, hardened dies, hardened crankshaft journals, etc.



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Complete specifications lodged with the Patents Office are open to public inspection almost immediately after their lodgment. Interested persons are now able to obtain the details of an invention for which protection is being sought.

Provision is also made (Patents Act, 1946) for an applicant to obtain damages, if infringement occurs, from the date of publication of the application. A rule of practice has been established whereby an application will be examined more speedily when a prima facie case of alleged infringement is proved.

Particulars of the necessary procedure will be supplied by any Patent Attorney practising in the Commonwealth.

### PATENT SPECIFICATIONS ACCEPTED

#### METAL FIREPLACES WITH OPEN FRONT AND SMOKE OUTLET.

137,145.—Radair Ltd., N.Z.

A metal fireplace consisting of an open front and smoke outlet is formed of two shells providing a continuous air space, the inner shell having an inclined surface. An air chamber extends across the top of the fireplace front,

opening at its ends into the air space, the two spaces being provided respectively with air inlets and outlets. Horizontally extending baffle plates are positioned above the air inlet to direct the air to the rear of the space, and the area of air-heating surface is increased by upwardly extending fin plates attached to the inner wall.

#### FLANGED JOINT BRACKET.

137,148.—W. Stubbs, Vic.

The bracket is of rectangular cross section and has a shelf portion, an attachment flange, and a retaining flange. Suitable holes are drilled to enable furniture integers to be joined together.

#### LOOSE-LEAF BINDER MECHANISM.

137,149.—H. Vernon, N.S.W.

Mechanism comprising elements, between which leaves may be clamped or bound, and having filing posts set into the lower clamping element, and the upper

element hollowly constructed to enclose a slidable locking tube or element adapted to be moved longitudinally so that appropriate holes therein grip the filing posts as required, is characterized by the provision, within slotted end portions of the clamping elements, of detachable slip-in elements. The element carries a screwed nut through which passes a screw whose outer end has a key fitting, and whose inner end abuts against the adjacent end of the locking tube to impart to the tube the necessary movement to lock it against the filing posts. The inserts may carry integral hinge portions.

#### RECIPROCABLE BROACHING MACHINE.

137,152.—Percival J. Taylor (Newcastle) Pty. Ltd., N.S.W.

A reciprocable broaching tool holder, having runners seating slidably within runways secured to the machine base and carrying a broach, is provided with a

second pair of runners adapted to slide in runways on the work holder, the runners and runways being of sufficient length to ensure engagement therebetween during the working stroke of the broach holder. A workpiece such as a semi-cylindrical half-sleeve bearing, is supported in a carrier block, one longitudinal edge face of which engages a fixed abutment, while the other edge face is engaged by the foot of a

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clamping lever, pivoted, and  
operated by a pneumatic cylinder.

### LIFTING APPARATUS.

137,154.—C. V. Federick, W.A.

To accelerate the engine on a  
load and for automatically reducing  
this speed whilst the lifter is  
waiting for the next load, a bag  
or the like lifting apparatus,  
operating from the exhaust of an  
internal combustion engine, is  
characterized in that a by-pass  
pipe is taken from the exhaust  
pipe and leads to a chamber,  
formed by a domed member and  
a diaphragm, in which the dia-  
phragm is connected to a rod  
that operates the engine throttle.  
A spring acts against the dia-  
phragm and also against a hol-  
low control screw. In a modifi-  
cation, a spring-loaded piston is  
provided in lieu of the diaphragm.

### COOKING STOVE WITH MOV- ABLE REFLECTOR PLATES.

137,155.—R. J. Black and P.  
Mottershead, Vic.

To reflect the heat from one or  
more heating elements to the top  
plate or the underneath grilling  
section of a cooking unit, mov-  
able reflector plates having highly  
polished surfaces are arranged  
above and below the heating ele-  
ment and are adapted to be  
moved into or out of position ac-  
cording to whether it is desired  
to reflect and concentrate heat to  
the top plate or to the grilling  
section of the unit.

### QUICK RETURN DEVICE FOR BAG LIFTERS.

137,156.—C. V. Federick, W.A.

To provide a quick return for  
bag lifters of the type utilizing  
gases under pressure in one or  
more cylinders, a venturi or sim-  
ilar nozzle through which the  
gases are discharged, is associated  
with a casing, extension and re-  
lief valve, when the valve is  
opened the discharging gases  
cause a negative pressure which  
is communicated to the cylinder  
or cylinders by the housing and  
extension, thus causing a rapid  
return of the pistons and their  
associated gear.

An automatic trip for the  
valve is provided which is oper-  
ated by an extension of the  
cradle of the lifter.

### DISCHARGING AND CONVEY- ING ASHES.

137,157.—John Thompson (Aus-  
tralia) Pty. Ltd., Vic.

To obviate blockage in a dis-  
charge chute, means for discharg-  
ing ash or the like into a sub-  
merged conveyor comprises two  
valves adapted to open automati-  
cally when a sufficient weight of  
ash accumulates above them, the  
valves being spaced to form a  
lock chamber therebetween which  
prevents ingress of vapours from  
the conveyor likely to cause in-  
ternal condensation of moisture  
and clogging.

The valves consist of hinged  
flaps closing against inclined  
seatings and having projecting  
arms on which adjustable  
counterweights may be mounted,  
the valves being so arranged  
that when the bottom valve is  
opened by a sufficient weight of  
ash the top valve will have closed.

### LIQUID DISPENSING DEVICE.

137,222.—W. C. Easton and J.  
McKenzie, Vic.

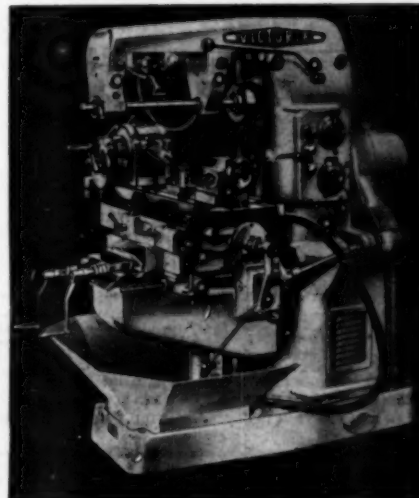
A pair of closed chambers have  
communicating means connecting  
their tops. Floats are disposed  
within the chambers and are  
adapted to rise and fall with the  
liquid level therein through sub-  
stantially the full height of the  
chambers. Valve means are  
associated with each float to seal  
the respective chamber from the  
communicating means when the  
float in said chamber reaches a  
predetermined position therein.  
Operating valve means are oper-  
able to admit liquid from a  
source of supply to the lower  
portion of either chamber and,  
conjointly, to allow liquid to dis-  
charge through the outlet from the  
other of the chambers.

### HAIR WAYER, WITH SPRING- CLOSED JAWS.

137,223.—W. J. McReady and Z.  
J. Harris, N.S.W.

To facilitate application, a pair  
of spring-closed jaws has a finger  
affixed to one end of the device  
and projecting between the jaws.  
Opposite ends of the respective  
jaws overlap, so that the devices  
will co-operate to form long  
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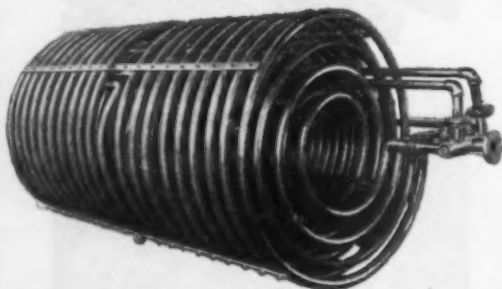
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### TILE-MAKING MACHINE.

137,234.—C. D. Richardson, Qld.

To ensure a tile of homogeneous structure and uniform density throughout, predetermined quantities of cementitious material are moved at regular intervals into a vertical mould comprising a back plate and pallet held in vertically disposed position beneath a vertical ram which reciprocates a predetermined distance in a hopper, and the pallet is released from the back plate to withdraw the pallet and tile after completion.

The pallet may be held the correct distance from the back plate by side mould plates clamped to the pallet by screws and may be removed by swinging the mould about a pivot and at the same time swinging up a take-off platform to receive the pallet which is then released by unscrewing and returning the back plate into the vertical position.

### PHOTOGRAPHIC COLLOID LAYER.

137,236.—Kodak (A'asia.) Pty. Ltd., Vic.

A photographic element comprises a support having thereon a layer of water-permeable colloidal material containing an addition polymer having periodically occurring quaternary ammonium groups attached thereto. The addition polymer may be selected from the group consisting of quaternary ammonium salts of polymerised vinyl substituted amines or azoles and their homologues, and may be used in relief imbibition printing processes.

### POWER DRIVEN SAWS.

137,240.—R. E. White, W.A.

To prevent gumming, a jet or spray of water is projected on to each side of the saw when manifestation of gumming becomes apparent. A tank is provided with means such as an air pump for the purpose of applying water under pressure, and a valve in a flexible hose controls the flow of water. Nozzles are positioned in the guard to spray directly on to the saw blade.

### ROTARY RETORT WITH HEATING CHAMBER.

137,238.—J. K. Young and E. A. Wright, W.A.

In a rotary retort of the type that includes a heating and combustion chamber enclosing the retort with its ends free, the discharge end leading into another compartment with a gas-tight joint, the joint or gland comprises a long collar of larger diameter than the retort attached so as to form an air jacket, with a trough acting as a channel for cooling water, and a bearing ring. A co-operating ring with bearing face on ring mounted on the compartment includes packing of asbestos held in place by a normal type gland.

### UMBRELLA NOTCH AND FERRULE.

137,406.—W. R. House, N.S.W.

A notch and ferrule assembly comprises a notch sleeve adapted

(Turn to page 65.)

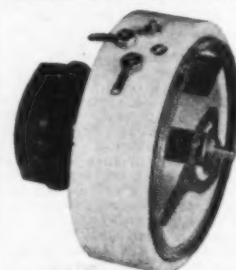
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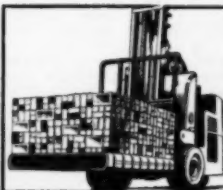
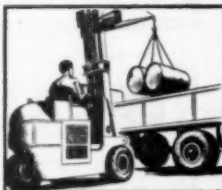
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less Refrigeration (Aust.) Pty. Ltd., Qantas Empire Airways Ltd., Richard Hughes Pty. Ltd., Rheem (Aust.) Pty. Ltd., Robertson & Co., Shell Co. of Aust. Ltd., Sydney County Council, State Electricity Commission of Victoria, Taubman (Qld.) Pty. Ltd., Taubmans Ltd., Tullochs Ltd., Toll, A. F. Pty. Ltd., Vegetable Oils Pty. Ltd., Vita-Foods Supply Co. Pty. Ltd., Vacuum Oil Co., Victorian Stevedoring & General Contracting Co. Pty. Ltd., Dept. of Works & Housing (Qld.) Wunderlich Ltd., Welded Products Pty. Ltd., Walter & Morris Ltd., Waymouth Motor Co., Western Australian Govt. Stores Dept., Yellow Express Carriers Ltd., Dept. of External Territories (Papua).

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(Continued from page 66.)

for affixture to one end of an umbrella shaft and having a grooved and slotted flange integral therewith, and a ferrule cup tightly encasing said sleeve with its apertured end adjacent said flange.

### INTERLEAVING FOLDED PAPERS.

187,295.—Zig Zag (N.Z.) Pty. Ltd., N.Z.

An apparatus for interleaving cigarette papers or the like has solenoid and micro-switch means whereby on a material gap occurring in the placing of the papers on either or both of the interleaving drums, the resultant drop in the degree of vacuum at the vacuum headers, associated with the interleaving drums, is utilised to stop the apparatus and to operate audible or visual indicating means. Spring-loaded diaphragm units which are sensitive to fluctuation in the degree of vacuum in the headers are provided for each interleaving drum and are connected by vacuum lines. A modification, where a single diaphragm vacuum sensitive unit is used, is also described and claimed.

### TRADE MARK APPLICATIONS

93,122. "Cold Point." Refrigerators, fans, vacuum cleaners, cake mixers, etc.—Dangar, Gedye & Malloch Ltd., Malloch House, 10-14 Young Street, Circular Quay, Sydney, N.S.W.

93,123. "Cold Seal." Washing machines, sewing machines, ironing machines, dryers.—Dangar Gedye & Malloch Ltd., Malloch House, 10-14 Young Street, Circular Quay, Sydney, N.S.W.

93,852. "Dishmatic." Dishwashing machines.—Lake State Products Inc., 1623 Wildwood Avenue, Jackson, Michigan, U.S.A.

94,735. "Advance." Engines.—Westinghouse Rosebery Pty. Limited, Joynton Avenue, Waterloo, N.S.W.

95,706. "Lesterite." Paints and enamels.—F. W. Lester & Co., 15 Nelson Street, Annandale, N.S.W.

### TENDERS FOR PATENTS

The proprietors of Letters Patent of the Commonwealth of Australia, No. 129,378, dated 16th August, 1946, granted for "Improvements in Flyers for Spinning and Like Machines", are desirous of entering into arrangements with interested persons for the exploitation (either by way of licence or otherwise on reasonable terms) of the said invention in the Commonwealth of Australia. Inquiries to be addressed to W. J. DAVIS, Patent Attorney, 28 Martin Place, Sydney.

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95,890. "Alouie." Catamenial  
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Cissie Louisa Bright, 4 Victoria  
Road, Camberwell, Victoria.

95,842. "Win-dor." Casement-  
window operators, casement-  
window stays, etc.—The Case-  
ment Hardware Company, 406  
Wood Street, Chicago, Illinois,  
U.S.A.

94,545. "Timco." Steel and al-  
loy steel in ingot form.—The  
Timken Roller Bearing Company,  
1835 Dueser Avenue, E.W., Can-  
ton, Ohio, U.S.A.

98,248. An oval design of the  
word "Daxio." Bituminous paint.  
—Norris Agencies Proprietary  
Limited, 639 Ann Street, Fortitude  
Valley, Brisbane, Queensland.

91,897. Design of the word  
"Quick." Enamels.—Lewis Berger  
& Sons (Australia) Pty. Limited,  
Rhodes, N.S.W.

95,319. "Interchem." Dye-stuffs  
and textile colouring materials.—  
Interchemical Corporation, 350  
Fifth Avenue, New York, U.S.A.

95,840. The stencilled word  
"Aridye." Textile printing pastes  
and textile printing colours.—  
Interchemical Corporation, 350  
Fifth Avenue, New York, U.S.A.

98,237. A label design showing,  
inter alia, the word "Samsonize."  
A preparation for preserving iron  
tanks and troughing and sealing  
holes therein.—Robert Usher &  
Sons, Robinson Road, Geebung,  
near Brisbane, Queensland.

95,822. "Tricamb." Insulating  
or protective coatings and sub-  
stances for yarns, threads, etc.  
—Australian Plexon Proprietary  
Limited, Bradmill House, Missen-  
den and Parramatta Roads, Cam-  
perdown, N.S.W.

91,802. "Turn Miles into  
Smiles—Ride A." Bicycles.—W.  
J. Lucas Limited, 26-40 Milligan  
Street, Perth, Western Australia.

95,782. "Visiflo." Refills for  
ball-pointed pens.—Stenmark Pro-  
prietary Limited, 177 Jasper  
Road, Bentleigh, Victoria.

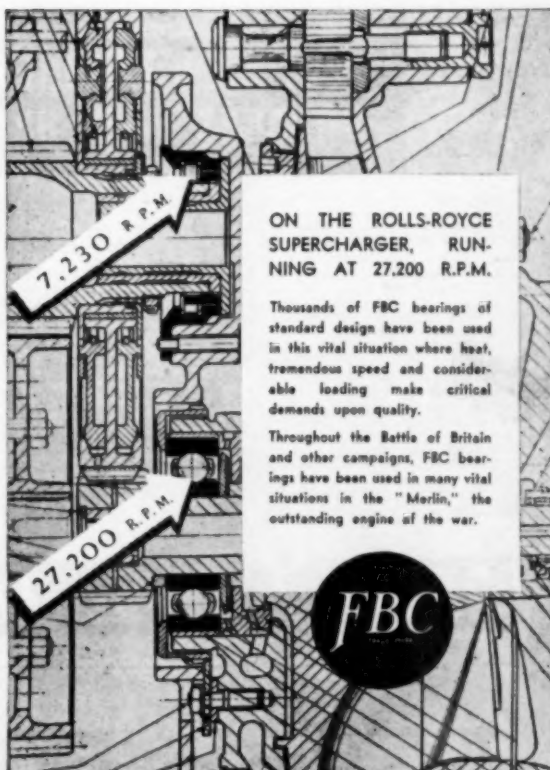
95,748. "Filmex." Tooth, nail,  
hair and all other brushes.—  
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### I.C.I. PLANNING EXPANSION.

The Finance Director of Im-  
perial Chemical Industries, Mr. S.  
P. Chambers, stated the other  
day that I.C.I. planned to spend  
more than £2,000,000 during the  
next three years in doubling the  
alkali output of its Osborne  
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The expansion would raise the  
total capital invested in the Os-  
borne alkali works to more than  
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(Turn to page 72.)

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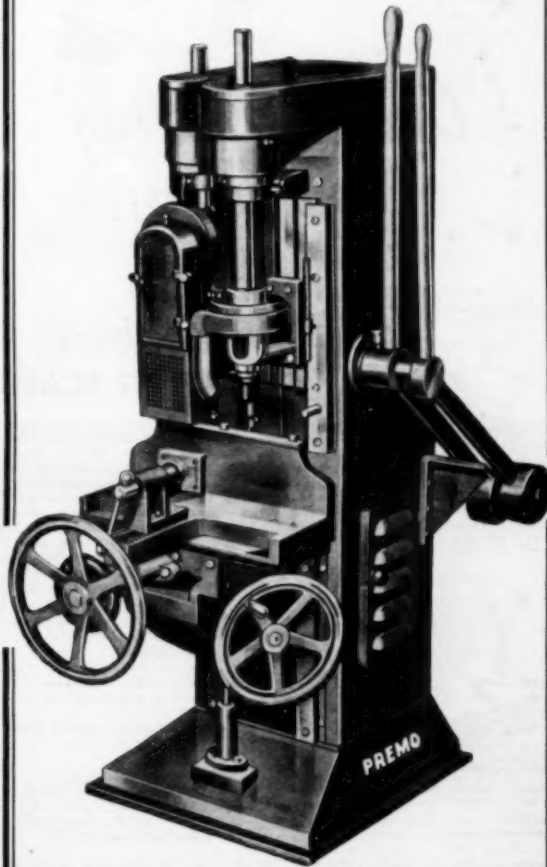
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(Continued from page 70.)

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Olympic Tyre & Rubber Co. Ltd., £303/19/11; Dunlop Rubber (Aust.) Ltd., £493/6/2; (Req. No. C-4/321/47).

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Olympic Tyre & Rubber Co. Ltd., £646/1/4; (Req. No. C-4/321/48). Goodyear Tyre & Rubber Co. (Aust.) Ltd., £1,608/7/10.

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Ingot (Req. Nos. C-4/371/298-9). Melbourne Iron & Steel Mills Pty. Ltd., £374/1/3; Melbourne Iron & Steel Mills Ltd., £2,084/15/6.

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(Turn to page 73.)





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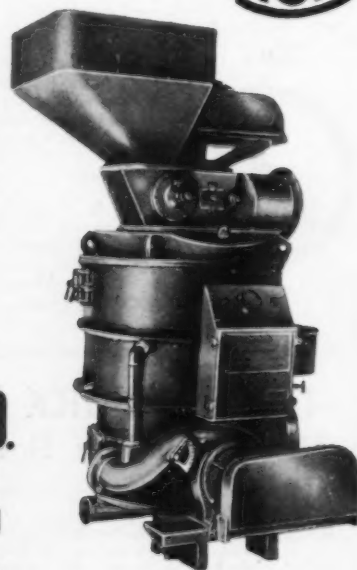
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(Turn to page 77.)

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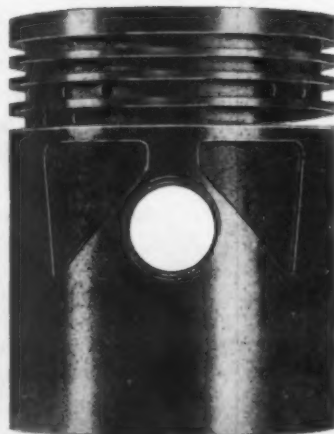
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(Continued from page 75.)

**Squeezes, and Axe Handles**  
(A/R. No. 776). S. Hoffnung &  
Co. Ltd., £231/18/10.

**Brooms, Millet** (A/R. No. 776).  
Wm. Felton & Co. Pty. Ltd.,  
£390.

**Silver, Solder** (A/R. No. 779).  
Garrett, Davidson & Matthey Pty.  
Ltd., £441.

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(A/R. 781). Sherwin-Williams Co.  
(Aust.) Pty. Ltd., £269/10/9.

**303 Rifle Furniture** (A/R. No.  
783). Siazengers (Aust.) Pty.  
Ltd., £8,325.

**Dried Brown Rice** (A/R. No.  
784). Waters Trading Co. Ltd.,  
£853/18/4.

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J. F. McKenzie & Co. Pty. Ltd.,  
£946/3/-.

**Toilet Paper, "Velvreen"** (A/R.  
No. 786). Paper Products Pty.  
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### WOMEN'S WAGES AND CHILD ENDOWMENT.

In the Full Arbitration Court during the past week, Mr. A. P. Aird who, with Mr. S. C. G. Wright, is appearing for the employers in the £10 basic wage claim by employees, expressed the opinion that the present ratio of 54 per cent. of the male basic wage should not be disturbed if the Court decided to fix a wage for unskilled women workers. "There is no need," he said, "to disturb the relationship of

the women's basic wage to the men's, unless there is a simultaneous examination of the needs of both sexes." Turning to the unions' general application for a £10 basic wage, Mr. Aird said the employers whom he represented contend that child endowment and moneys to which people are entitled under Social Services should be considered when the Court is considering the basic wage.

### MUNITION FACTORIES AND CIVILIAN GOODS.

The Minister for Supply, Mr. Beale, reported in Canberra, recently that Government factories are producing increasing quantities of munitions. "Production of civilian goods in Government munitions factories," he added, "is being tapered off because it has been found necessary to produce more war supplies and munitions for the defence services. Munitions factories have been accepting civilian orders for .22 rifle, refrigerator parts, tractor parts, and similar goods because they were scarce. The tendency now is to accept less of these orders and to concentrate on Government defence supplies".

### "FRIGIDAIRE" TRADE MARK DECISION.

The Supreme Court of Canada recently considered whether the word "Frigidaire" should be expunged from the register of trade marks on the ground that it was

a word descriptive of the character or quality of the words in association with which it was used.

By a majority, Rinfret, C.J.C. and Kerwin, J., dissenting, the Court upheld the decision of the Exchequer Court, expunging the word. Rand, J., for the majority, said this: "In our mastery of environment we have devoted a great deal of attention to foods, a most important treatment of which has been their preservation against high temperatures. What is the essence of the idea of a refrigerator? Unquestionably, that of cold air for preservation."

Any combination of existing words involving the ideas of air and cold was descriptive of refrigerators. The Court considered that a monopoly in such words should not be upheld.

### E. T. BROWN LTD. EXTENDS OPERATIONS.

E. T. Brown Ltd., Melbourne, who are making extensive additions to their plant, announce that the manufacture of their products in New South Wales can to-day be handled by their subsidiary, Forster's Products Pty. Ltd., whose name has been altered to Brownbult (N.S.W.) Ltd. The company has decided to conclude as from June 30th the partnership with Claude Neon Ltd., which operates under the name of Brownbult Steel Equipment Co. (N.S.W.).

### DEATH OF MR. GEO. A. BOND.

The death occurred in Sydney recently of Mr. George A. Bond, who was the founder of Bonds Industries Ltd. The late Mr. Bond pioneered the Australian cotton-spinning industry. He was born in Kentucky, U.S.A., came to Australia in 1912, started an indent agency and imported, among other things, American silk stockings. Then he built a factory for their manufacture at Redfern in 1917. He also introduced men's athletic singlets from America, was one of the pioneers of the cotton-growing industry in Queensland in 1922, and built a large spinning and weaving mill at Wentworthville.

### FACTORY HOUSING SCHEME.

The Victorian Government has approved of the registration of a co-operative housing society formed by employees of the Sunshine Harvester Works with the assistance of the management. The Premier, Mr. Hollway, said that this further evidence of co-operation between employers and employees in the effort to end the housing shortage was a most practical and worthwhile move.

Only recently, he said, Imperial Chemical Industries of Australia and New Zealand Ltd. had formed a society and houses were being erected by the company. Employees were obtaining the finance to purchase the home through the co-operative housing plan.

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# CURRENT TENDERS

## NEW TENDERS

The following tenders have been called since our last issue. Current tenders which have been published in previous issues follow this section.

### COMMONWEALTH

#### DEPARTMENT OF WORKS AND HOUSING.

Automatic Fire Sprinkler System, for Woolloomooloo. July 18.  
Beer Cooling Equipment, for Parliament House. July 11.  
Copper Tube, 1,800 ft. of various sizes, for Chowder Bay. July 6.  
Drums (100), 44 gallon, empty. Purchase of. July 6.  
Electrical Materials. July 13.  
Hot Water Reticulation, for Canberra. July 11.

### NEW SOUTH WALES

#### DEPARTMENT OF MAIN ROADS.

Bitumen Sprayers, 800-1,000 gall. capacity. July 18.  
Concrete Pipe, July 6.  
Drums, 44 gallon. July 4.

Electric Drying Ovens. July 6.  
Electrical Equipment. July 4.  
Jackhammer Parts. July 6.  
Petrol Pump and 500 gallon Tank. July 11.  
Recording Thermographs. July 4.  
Steel Clothes Lockers. July 6.

#### FORESTRY COMMISSION.

Horse Rugs. July 4.  
Wire Rope. July 4.

#### GOVERNMENT RAILWAYS DEPARTMENT.

Steel Clothes Lockers (4 tier), (Quot. CE-6321). July 5.  
Train Lighting Battery Cells (Quot. CE-8131). July 6.

#### METROPOLITAN WATER, SEWERAGE AND DRAINAGE BOARD.

M.S. Semi-Trailer Transporter Units (22). Extended to July 18.  
Steam Shovel (Excavator), incomplete, rail type. Purchase of. July 25.  
Transformers (2), 500 KVA, for Warragamba Dam. Aug. 8.

#### SYDNEY COUNTY COUNCIL.

Structural Steel Building Framework, for Induced Draft Fan Building, for Bunnerong "B" Power Station (Spec. 1427). July 20.

### MISCELLANEOUS.

Diamond Drilling Equipment, for Snowy Mountains Hydro Electric Authority. July 18.  
Gang Mower Combination, comprising gang mowers (3) and tractor, Purchase of, from Municipality of Randwick. July 4.  
Plant:—Tractor, crawler track type, Diesel engine, about 40-50 drawbar, fitted with equipment, for loading and dozing; Ripper, manually controlled, suit above, for Shire of Mandowra. July 15.  
Transformers, 3 phase, 22,000 volt., for Monaro County Council. Aug. 5.

Hot Water Service, for Ballarat Gaol. July 11.

Kerosene Hot Water Service, for Warrion. July 4.

Kerosene Hot Water Service, for Freshwater Creek. July 4.

Meat Cutting Band Saw, electric, for Beechworth Mental Hospital. July 4.

Meat Rails, Racks, etc., for Greenvale. July 4.

Refrigerators (4), household type, for Greenvale. July 4.

Refrigerator, household type, for Coburg Female Prison. July 4.

Sawdust Extraction System, for Footscray. July 18.

### VICTORIA

#### CITY OF MELBOURNE.

Low Tension Junction Boxes (Spec. 723/E). Extended to July 24.

#### DEPARTMENT OF PUBLIC WORKS.

Bain Marie and Hot Press, electrically heated, for Armadale. July 4.

Bio-box Ventilation, for Burnley. July 18.

Electric Potato Feeler, for Kew Mental Hospital. July 4.

Electric Meat Mincer, for Kew Mental Hospital. July 4.

Fuel Hot Water System, for Tongala. July 11.

Fuel Hot Water Service, for Rupanyup. July 11.

### \* \* SEE ALSO \* \*

#### "LATE OPEN TENDERS"

Steam Oven Cookers (3), for Mont Park. July 4.

#### DEPARTMENT OF WORKS AND HOUSING.

Oil Burning Equipment. July 4.

Oil Burning Installation, for Parkville. Aug. 1.

#### GOVERNMENT RAILWAYS DEPARTMENT.

Galvanised Steel Turnbuckles. July 5.

Salt Glazed Vitrified Stoneware. July 12.

(Turn to page 79.)

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### NEW TENDERS — Contd.

#### MELBOURNE AND METROPOLITAN BOARD OF WORKS.

Steel Plate, 2,440 tons. Aug. 1.

#### MELBOURNE HARBOUR TRUST.

Chains, for Dredging Plant. July 14.

#### POSTMASTER-GENERAL'S DEPARTMENT.

Refuse Bins (Sch. V.369). July 25.

Tracked Back Filling Machines (Sch. V.372). July 25.

#### STATE ELECTRICITY COMMISSION.

Bucket Links, for Coal Dredgers (Spec. 50-51/36). July 12.

Structural Steel Gate (Spec. 50-51/16). July 12.

#### MISCELLANEOUS.

Centrifugal Pump, 100,000 gals. per hour, for Borough Echuca Water Trust. July 10.

Plant—Crawler Tractor of approx. 50 h.p.; Road Ripper; Road Grader, suit Tractor Haulage and Road Scoop, for Tractor use, for Shire of Kyneton. July 6.

Power Grader, approx. 45 h.p. for Shire of Alberton. July 10.

Water Filtration and Purification Plant:—Flocculating and Sludge Scrapping Mechanisms; Filter Control Valves; Rate Controllers, Indicators, and Connecting Pipework; C.I. Pipes and Fittings, for Treatment Plant Units; Chemical Dry Feeders, etc.; Solution Mixing Equipment, Chlorinator Equipment, etc., for Mildura Urban Water Trust. Extended to July 24.

### WEST AUSTRALIA

#### GOVERNMENT TENDER BOARD.

Alternator Unit, oil engine driven. July 20.

Copper and Steel Conductor. July 13.

Flood and Trouble Lights, for Forests Dept. July 6.

Hot Press, for Pinjarra Hospital. July 6.

Mild Steel Plate, 1 inch and 3/16 inch. July 13.

Overhead Travelling Crane. July 6.

Planing Machine and Table Saw Bench. July 6.

Railway Wagons, for Railways Dept. Sept. 7.

Refrigeration Equipment. July 6.

Stainless Steel Fittings, for Wooroloo Sanatorium. July 6.

### CURRENT TENDERS

The following tenders have appeared in previous issues and are still current.

### COMMONWEALTH

#### POSTMASTER-GENERAL'S DEPARTMENT.

Barretters (Sch. C.8298). July 11.

Cable and Carrier Cable Systems (Sch. C.6304). July 4.

Canvas and Duck, for Mail Bags (Sch. V.6326). Aug. 10.

Carrier Telegraph Equipment (Sch. C.6288). July 20.

Carrier Telephone Equipment (Sch. C.6343). July 13.

Communication System between Sydney and Melbourne (Spec. C.8157). Extended to Jan. 18, 1951.

Condensers (Sch. C.6292). July 20.

File Covers (Sch. C.6333). July 6.

Lamps, Caps and Sockets (Sch. C.6324). Aug. 15.

Lead Sealers and Parts (Sch. C.6170). Aug. 3.

Loading Coils in Cases (Sch. C.6279). July 13.

Magnetic Type Recorders (Sch. C.6303). July 27.

Mechanically Operated Spring-sets (Sch. C.6323). Aug. 1.

Microphone, Stands, and Cable (Sch. C.6316). Aug. 1.

Moskum Printer Parts (Sch. C.6285). July 20.

Pipe Hooks and Clips (Sch. C.6319). July 6.

Pole Caps (Sch. C.6335). Aug. 31.

Post Office Scales and Weights (Sch. C.6284). July 18.

Ringling Equipment (Sch. C.6311). Aug. 1.

Routine Testing Equipment (Sch. C.6281). July 25.

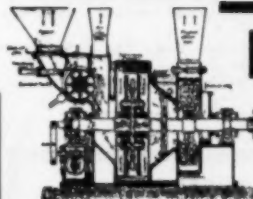
Semi Automatic Trunk Exchange Equipment (Sch. C.6025). Sept. 28.

(Turn to page 80.)

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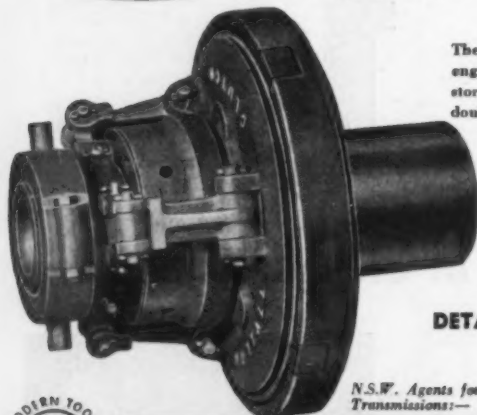
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### CURRENT TENDERS — contd.

Sleeves, Waxed Paper (Sch. C-6337). July 6.

Testing Instruments (Insulating Resistances), (Sch. C.6289). July 13.

Tools, Leadworking, Measuring and Miscellaneous (Sch. C.6246). July 20.

Underground Cable, large sizes (Sch. C.6334). July 6.

Wire Carrier Telephone Equipment, H Channel Open (Sch. C-6305). July 27.

### DEPARTMENT OF SUPPLY AND DEVELOPMENT.

Electric Ranges, July 4.  
Lighthouse Optical Apparatus, July 6.

Radio and Test Equipment, July 11.

Radiosonde Transmitters, July 18.

Refrigerators, July 6.

Steel Die Blocks, Purchase of, July 18.

### DEPARTMENT OF WORKS AND HOUSING.

Hot Water Reticulation, for Hotel, July 11.

## STATES

### NEW SOUTH WALES

### GOVERNMENT RAILWAYS DEPARTMENT.

Ash Conveyors, for Lake Macquarie Power Station (Spec. 1268). Aug. 9.

Automatic Arc Welding Unit (Sch. CE-8130). July 13.

Bain Maries, electrically heated (Sch. CE-8113). July 4.

Brick Cutting Machine, complete (Sch. CE-8099). July 19.

Carrier Telephone System, for Chullora Workshops (Spec. 84). Extended to July 5.

Coal Handling Equipment, for Lake Macquarie Power Station (Spec. 1263). July 5.

Drilling Machine, floor stand, motor driven (Sch. CE-8142). July 19.

Dust Collectors (5), for UHimo Power Station (Spec. 1252). Extended to July 19.

Indoor Type Oil Circuit Breakers, 6,600 volt., 75 M.V.A., for Awaba State Coal Mine Substation (Spec. 1266). Aug. 30.

Indoor Type Oil Circuit Breakers, 415 volt., for Awaba State Coal Mine Substation (Spec. 1267). Aug. 30.

Iron Clad Self Resetting Reversing Switch (Sch. CE-8098). July 4.

(Turn to page 82.)

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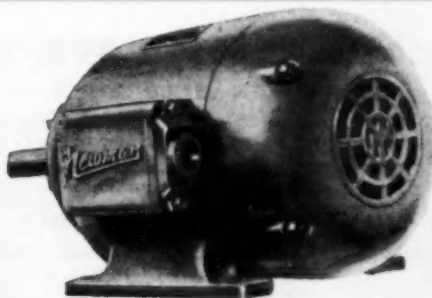
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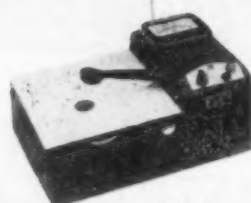
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### CURRENT TENDERS — contd.

Lightning Arresters, distribution type (Quote CE-8181). July 26.

Metal Band Sawing Machine, Toolmakers (Sch. CE-8093). July 17.

Rectifier Units (4,000 KW) and Energy Dissipating Resistor Units (Spec. 1258). Extended to Sept. 6.

Road Weighbridge, 35 ton, for Conoble. July 26.

Self Lowering Jacks, 50 ton capacity (Sch. CE-5444). July 6.

Squirrel Cage Induction Motor (2 h.p.), triplet pole magnetic contactor and Iron Clad Push-Button Station (Sch. CE-898). July 5.

Superheater Tubes, for Boiler, complete set (Quote CE-2806). July 5.

### DEPARTMENT OF MAIN ROADS.

Bronze Castings. July 4.

Concrete Pipes. July 4.

Diving Dress. July 4.

Metalwork and Machinery. Oct. 5.

Screening Machinery, for Granville. July 11.

Structural Steelwork, for Granville. Extended to July 11.

Tools, for Engineers. July 4.

Valve Seat Grinding Kit. July 4.

### DEPARTMENT OF WORKS AND HOUSING.

Electric Water Supply Systems (2), continuous heated, for Garden Island. July 4.

### METROPOLITAN WATER, SEWERAGE AND DRAINAGE BOARD.

Galvanised M.S. Continuous Weld Tubing (90 miles) of various sizes and approx. 95,000 galv. M.S. Tubulars. July 18.

M.S. Electrically Welded Cement Lined and Coated Fittings. July 11.

Vertical Spindle Centrifugal Type Pumping Units (2), electrically driven, for Upper Cordaux. July 25.

### SYDNEY COUNTY COUNCIL.

Air Break Isolating Switches, for Support Insulators (Spec. 1386). Extended to July 6.

Cable (\$3,000 volt.) and Pilot Cable (Spec. 1423). Extended to July 6.

Circulating Water Screens, self-cleaning, for Fyrmont "B" Power Station (Spec. 1426). July 27.

M.S. Dust Wetting Tanks and Associated Piping, for Fyrmont "B" Power Station (Spec. 1428). July 13.

Metal Clad Neutral Switching Equipments, 6000 volt, for sub-stations (Spec. 1418). August 10.

Metal Clad Switchgear (11,000 volt, 250 MVA), for City Sub-station (Spec. 1382). August 17.

Metal Clad Switchgear (33,000 volt.), for Homebush Sub-station (Spec. 1403). Aug. 17.

Motor Driven Vacuum Cleaning Plant and Piping, fixed type, for Bunnerong "B" Power Station (Spec. 1402). Aug. 10.

Oil Immersed Fuse Switches, 11,000 volt. (Spec. 1421). Sept. 28.

Outdoor Combined Switches and Fuses, 11,000 volt, high rupt.

(Turn to page 83.)

### CHEMICAL TANKS, DRUMS, CONTAINERS

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## CURRENT TENDERS — contd.

turing capacity (Spec. 1420). Aug. 31.

Power Transformers (45 MVA), for Homebush Sub-station (Spec. 1419). Aug. 31.

Precision Lathe, 8 inch swing, and Accessories (Spec. 1425). Sept. 7.

Substation Relay Group Equipment, for City A.C. Network Signal Equipment (Spec. 1408). Aug. 17.

Vacuum Cleaning Plant, fixed type, motor driven, for Fyrmont "B" Power Station (Spec. 1429). Aug. 10.

Vacuum Cleaning Plant, motor driven, fixed type, for Fyrmont "B" Power Station (Spec. 1402). Aug. 10.

Voltage Cables, high and medium, for Bunnerong Power Station (Spec. 1415). Extended to July 20.

## WATER CONSERVATION AND IRRIGATION COMMISSION.

Portable Concrete Mixer (2), engine driven, approx. 10 c.f. capacity. July 6.

## MISCELLANEOUS.

Boiler Feed Pumps, for Clarence River County Council. July 25.

Cables of various lengths and sizes, for Shire of Wingecarribee. July 10.

F.M. Radio Communication Service of one Central Station and five (5) Mobile Stations, for Sutherland Shire Council. July 8.

Fuels—Motor Spirit; Kerosene; Lubricating Oils and Greases and Street Lighting Lamps, for St. George County Council. July 6.

Gang Mower Combination, comprising Tractor and Gang Mowers, 7 ft. cut. Purchase of, from Municipality of Randwick. July 4.

Plant—Dozers (6), 2-40 h.p., 2-60 h.p., and 2-80 h.p.; and Low Loader Float, for City of Greater Wollongong. July 10.

Plant—Tractor, fitted with equipment for loading and dosing, powered with a Diesel motor of 26-38 h.p.; Heavy-duty road grader, approx. 22,000 lb., powered

with a Diesel engine, 60-100 h.p., for Shire of Wollondilly. July 17.

Road Plant—Crawler type Diesel Tractor, 60/70 h.p., fitted with cable operated angle and tilt dozer; Patrol Grader, 12,000/14,000 lb., with power controls and scarifier, for Shire of Nundah. July 8.

Switchgear, truck type (11,000 v.), for Shire of Blacktown. July 4.

Truck Type Switchgear (11,000 v.), for Shire of Blacktown. July 4.

## VICTORIA

### GOVERNMENT RAILWAYS DEPARTMENT.

Supervisory Control Equipment, Control Desk Key Panels and Diagram Panels. Aug. 9.

### CITY OF MELBOURNE.

Fabricated Steelwork for Galleries and Ladders (Spec. 719/E). Extended to July 3.

Radial Drilling Machine (Spec. 722/E). July 2.

Radial Drilling Machine (Spec. 722/E). July 3.

### COMMONWEALTH RAILWAYS DEPARTMENT.

Flashbolts and Nuts. July 4.

### DEPARTMENT OF WORKS AND HOUSING.

C.I. Water Pipes and Specials. July 4.

Galvanised Water Pipes. July 4.

### MELBOURNE AND METROPOLITAN BOARD OF WORKS.

M.S. Plates, Bars and Sections (approx. 950 tons). July 18.

Steel Plate (2,440 tons). Aug. 1.

Vat and Furnace, (400 gall.). July 4.

### MELBOURNE HARBOUR TRUST.

Chains, for Dredging Plant. July 14.

Control Instruments for Cooling Towers (Spec. 60-51/7). July 5.

(Turn to page 84.)



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## CURRENT TENDERS — contd.

### POSTMASTER-GENERAL'S DEPARTMENT.

Agricultural Drain Pipes (Sch. V.350). July 11.

Bin Store Units (Sch. V.362). July 11.

Motor-cycle Parts (Sch. V.358). July 4.

Power Board Fittings (Sch. V.361). July 4.

Rectifiers (Sch. V.364). July 4.

### STATE ELECTRICITY COM- MISSION.

Automatic Telephone Appara-  
tus (Spec. 50-51/13). Aug. 2.

Bar Bending and Cropping Ma-  
chine (Spec. 50-51/23). July 12.

Belt Conveyor System (Spec. 50-51/4). Aug. 2.

Control Cable, V.R. or P.C.I. (Spec. 50-51/1). Aug. 16.

Fusion Welded M.S. Air Re-  
ceivers (Spec. 50-51/8). July 5.

Indoor Wall Mounting Current  
Transformers (Spec. 50-51/12).  
July 19.

Induced Draft Fans, Steel  
Flues, Dust Eliminators and  
Structural Steel Housing (Spec.  
50-51/5). Aug. 16.

Low Voltage Switch-fuse Com-  
binations, totally enclosed (Spec.  
50-51/10). July 19.

M.S. Water Storage Tanks, with  
Accessory Equipment (Spec. 50-  
51/11). July 5.

O.H. Travelling Crane, electric-  
ally operated (Spec. 50-51/18).  
July 19.

Outdoor Switchgear and Ac-  
cessories, 66,000 and 22,000 volt.  
(Spec. 50-51/6). Aug. 16.

Switchgear (220,000 volt.) and  
Accessories (Spec. 49-50/251).  
Extended to July 26.

Telephone Cable (Spec. 49-  
50/291). July 12.

Universal Milling Machine  
(Spec. 50-51/22). July 12.

### STATE RIVERS AND WATER SUPPLY COMMISSION.

Electric Pumping Units (4),  
motor-driven, for Red Cliffs. June  
30.

Lubricating Oils and Greases  
July 18.

### MISCELLANEOUS.

Filtration Plant, for Sheppar-  
ton Urban Water Trust. Extended  
to July 4.

Oil Circuit Breakers, for City  
of Footscray. Extended to July  
17.

Pick Up Street Sweeping Ma-  
chine, for City of Adelaide. July  
28.

Road Traffic Control Signal  
Equipment, for City of Kew. July  
11.

Traffic Control Lights, for Bor-  
ough of Ringwood. July 6.

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phase, 50 cycle Outdoor Type  
Transformers, with standard tap-  
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(Turn to page 85.)

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## CURRENT TENDERS — contd.

Transformer, with standard tap-  
pings and design, and controlled  
by an externally operated off-lead  
tap-changing switch, for City of  
Ararat. July 3.

## QUEENSLAND

### GOVERNMENT RAILWAYS DEPARTMENT.

Locomotives, Diesel, electric.  
July 14.  
Machine Tools. July 18.  
Rolled Steel Tyres, 4,000. July  
20.

### STATE ELECTRICITY COM- MISSION.

Alternator, 6.6 KV, 125 KW  
(Spec. 194). July 19.  
C.I. Pipes and Specials (Spec.  
211). July 12.  
Concrete Pipes, reinforced  
(Spec. 225). July 19.  
Control Equipment, for Circu-  
lating Water System (Spec. 215).  
July 19.  
Generating Plant, gas-cum-oil  
driven (Spec. 219). July 5.  
Power House Switchboards  
(Spec. 195). Aug. 9.  
Steam Piping and Valves (Spec.  
229). July 12.  
Steam Turbo Alternators (Spec.  
200). Aug. 30.  
Steam Turbo Alternator (Spec.  
196). Aug. 16.  
Water Tube Boilers (Spec. 200).  
Aug. 30.

### MISCELLANEOUS.

Low Voltage Sub-station Equip-  
ment, for Townsville Regional  
Electricity Board. July 17.  
Switchgear (11,000 volt.), for  
Townsville Regional Electricity  
Board. Aug. 1.

## SOUTH AUSTRALIA

### SUPPLY AND TENDER BOARD.

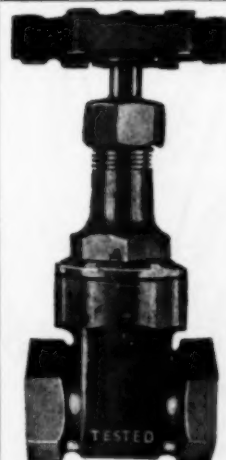
Aluminium or Aluminium Alloy  
Conduit and Fittings. July 3.

## WEST AUSTRALIA

### GOVERNMENT TENDER BOARD.

Diesel Mechanical Locomotives  
(18). July 20.  
Diesel Electric Main Line  
Locomotives (48). July 27.  
M.S. Rolled Sections. July 6.  
Steam Travelling Cranes. Ex-  
tended to July 6.  
Steam Travelling Cranes. Ex-  
tended to July 8.  
Steel Rivets, for Railways. July  
20.  
Steel Lockers. July 6.  
Washing Machine, for Wooroo-  
loo. July 6.

(Turn to page 86.)



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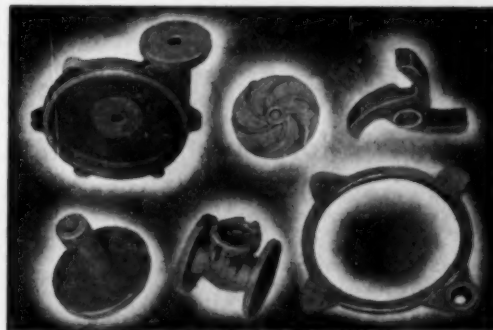
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## CURRENT TENDERS — contd.

### TASMANIA

#### HYDRO-ELECTRIC COMMISSION

Automatic Self Closing Valves  
(5), 90 inch diameter. Aug. 1.

#### MISCELLANEOUS.

Miscellaneous Piping, Cast Iron, Asbestos Cement, or Mild Steel Pipes, for the Trunk Mains; Valves for Trunk Mains; Cast Iron Pipe Specials for Mains from Lindisfarne to Bellerive; Cast Iron or Asbestos Cement Pipes for Lindisfarne, Montague Bay, and Bellerive Reticulation; Valves for Reticulation Mains at Lindisfarne, Bellerive, and Montague Bay; Cast Iron Pipe Specials for Lindisfarne, Montague Bay, and Bellerive Reticulation, for Municipality of Clarence. Aug. 21.

## Accepted Tenders

### COMMONWEALTH

#### DEPARTMENT OF SUPPLY.

Airmen's Mattresses (Req. C-4/250/87). Bruce Pie Industries Ltd., £1,536/16/-.

Pyjama Suits (Req. C-4/251/55). I. H. Jedwab and Sons, £23,340/14/2; Ryzman and Co., £1,530/10/11; W. Nadar, £6,030; Keren Clothing Co., £264.

Cylinders (Req. C-4/360/55). Wharlington Bros., £307/10/-.

Bolts (Req. C-4/366/98). Thos. Warburton Pty. Ltd., £355/2/6.

Mild Steel Plates (Req. C-4/371/247). The Broken Hill Pty. Co. Ltd., £458/11/5.

Surveyors' Equipment (Req. C-4/376/33). N. H. Seward Pty. Ltd., £386/12/3.

Marking Paint Brushes (Req. C-4/157/17). John Zevenboom and Co. Pty. Ltd., £235/6/-.

Distemper Brushes (Req. C-4/157/17). S. A. Brush Co. Ltd., £1,749/11/3.

Wooden Crates (Req. C-4/177/4). Strand Manufacturing & Agency Co., £227/0/9.

Non-skid Dark Grey Paint (Req. C-4/178/59). Lewis Berger and Sons (Aust.) Pty. Ltd., £1,828/2/6.

Battledress Blouses (Req. C-4/252/5). Rockingham Clothes Ltd., £11,587/10/-.

Knapsack Sprayers (Req. C-4/266/116). A. G. Way and Co. Pty. Ltd., £877/10/-.

(Turn to page 87.)

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## Accepted Tenders - Continued

**Diesel Operated Fork Lift Trucks.** Coventry Climax (Req. C4/311/11). Queens Bridge Motor & Engineering Co. Pty. Ltd., £5,161/13/-.

**Large One-piece Stainless Steel Table Knives** (Req. C4/175/98). Briscoe & Co. Ltd., £2,623/12/2.

**Pillows** (Req. C4/266/191). Howard & Dodd, £468.

**Fibre Mattresses** (Req. C4/266/191). Rolfe & Son, £3,846/6/3.

**Waterproof Sheets for Cots** (Req. C4/267/28). Bramac Ltd., £463/2/6.

**Cot Sheets** (Req. C4/267/30). Lebel Trading Co. (Aust.) Ltd., £900.

**P.V.E. Slip Gauges** (Req. C4/313/158). McPhersons Ltd., £391.

**Sliding, Surfacing and Screw Cutting Lathe** (Req. C4/313/187). Gilbert Lodge & Co. Ltd., £2,378/10/-.

**Cathode Ray Oscilloscope, with Visual Green Screen** (Req. C4/319/18). Electronics Industries Imports Pty. Ltd., £268/10/-.

## DEPARTMENT OF WORKS AND HOUSING.

**7 x 250,000 gallon Earth Tanks,** at Northern Territory. Frick and McConville, £4,362/9/2.

**Evaporative Cooling and Heating Equipment,** at Wagga Post Office, Atherton (N.S.W.) Pty. Ltd., £2,450.

**Refrigerated Cabinets for Buffet** (2), at G.P.O., Sydney. Refrigerator Installation & Service Co. Pty. Ltd., £825.

**Air Conditioning Plant, in the Airways Operations Building,** at Mascot. Stuart, Walker & Co., £10,550.

**Hot Water System, at Married Quarters,** Drayton. J. M. Glassel (Queensland) Pty. Ltd., £1,060.

**Air Conditioning Plant, at Coorparoo.** Evans, Deakin & Co. Ltd., £5,227/3/8.

**Outdoor Switchgear, at Deakin Sub-station.** Wilson Electric Transformer Co., £3,109/10/-.

**Cool Room Refrigeration, at Community Hospital, Canberra.** Refrigeration and Installation Co. Pty. Ltd., £295.

## NEW SOUTH WALES

### DEPARTMENT OF MAIN ROADS.

**Gears and Gearboxes.** Sonnerdale Ltd. (part), £125/13/-; Coote & Jorgenson Ltd. (part), £798.

**Automotive Equipment.** Bradley Bros. Ltd. (part), £2/3/11; Bennett & Barkell Ltd., £34/0/1.

**Lathe Equipment.** McPhersons Ltd., £27/15/-; Eagle & Globe Steel Co. Ltd., £53/11/-.

**Volume Grease Guns and Lubricant Volume Compressors.** Industrial Sales and Service Pty. Ltd., £73/8/4; Tutt, Bryant (N.S.W.) Pty. Ltd. (part), £166/18/-.

**Spanners.** Demco Mach. Co. Ltd., £8/8/2; William Adams & Co. Ltd., £42/10/3; Nock & Kirby Ltd. (part), £1/8/9; Motor Traders Pty. Ltd., £8/9/3; H. P.

(Turn to page 88.)

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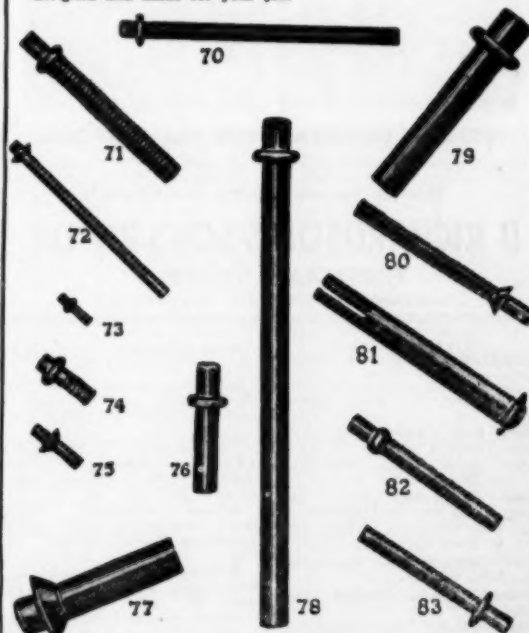


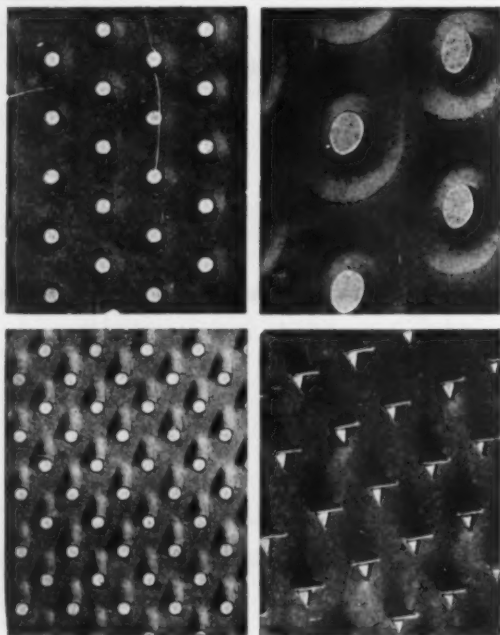
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Post Drill. Demco Machinery Co. Pty. Ltd., £5/6/3.

Air Compressor Units and Spray Guns. K. L. Distributors Pty. Ltd. (part), £1,484/9/6; Bennett & Wood Pty. Ltd., £171.

Protection Angles. PermaSteel Pty. Ltd., £22/10/-.

Petrol Engines. Vincent Bros., £157/10/-.

Turnbuckles. H. Jorgensen, £30.

Jacks. Jolpin Bros. Pty. Ltd., £25/11/6; Westcott, Hazell & Co. Pty. Ltd., £34/2/2; Grimley Ltd., £8/18/-.

Petrol Lawn Mower. Scott, Bonnar (Vic.) Pty. Ltd., £103/10/-.

Marine Bonded Five Ply. Proofwood Ltd., £105/13/9.

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Voltage Regulating Equipment, Bunnerong "B", £2,115. Australian General Electric Pty. Ltd.

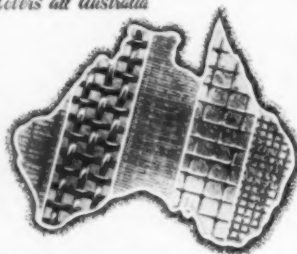
Telescopic Loading Chutes and Observation Pedestals, four, Fyrmont "B", £1,589. E. Vowles. Circuit Breakers, Air, 3 Pole, 1v., 20, £5,557. H. & S. Electrical Co. Pty. Ltd.

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Electric Goods Lift (20 cwt.), for Auburn Railway Station (Spec. 1250). Hydraulic Power Electric & Hydraulic Lifts Ltd., £2,365/19/.

Bogie Coal Hopper Waggon, 1,600 (Spec. 2195). A. Goninan & Co. Ltd., £2,771,200.

PABX Auto. Telephone Exchange (for Dept. of R.T. & Tys.), 25/50 line (Spec. 79). Ericsson Telephone Mfg. Co., £1,324/15/8.

50 kVA Transformers, for Melbourne Sub-station (two), (Spec. 1261). Noyes Bros. (Sydney) Ltd., £938.

gal. tins, 1,200, 27/6 gal.; 1 qt. tins, 200, 31/6 gal.

Paint, Cement, White, Cold Water (5,096 lbs.), (T.7635). Taubmans Pty. Ltd., 28/6 per 28 lb. keg.

Figmented in Sealer (T.7637). Taubmans Pty. Ltd., 4 gal. tins, 2,200 gals., 25/- gal.; 1 gal. tins, 550 gals., 26/- gal.

Oil, Nigger Brown, in Stain (T.7637). Taubmans Pty. Ltd., 4 gal. tins, 500 gals., 18/- gal.; 1 gal. tins, 60 gals., 17/- gal.

Switchboard Cover (2,150 No.), (T.7662). Martin & King Pty. Ltd., 12/2 each.

### DEPARTMENT OF PUBLIC WORKS.

Fittings, at Emergency Housing, Watsonia. H. F. Lowe, £274/10/-.

Lighting Equipment, at Terang High School. Nurnane's Electrical Services, £92/12/6.

Heating, etc., at Melbourne Radio School, Technical College. A. E. Atherton & Sons Pty. Ltd., £8,527/15/-.

Refrigerator, at Melbourne State Laboratories. New System Telephones Pty. Ltd., £109.

### VICTORIA

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Eggshell, Pale Ivory Enamel (T.7634). Taubmans Pty. Ltd., 1 gal tins, 1,200, 28/6 gal.; 1 qt. tins, 200, 32/6 gal.; Undercoat, 1



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## Late Open Tenders

### COMMONWEALTH

#### POSTMASTER-GENERAL'S DEPARTMENT.

Beds and Bedding (Sch. C.6349).  
July 20.  
Bimotional Switch Parts (Sch.  
C.6344). Sept. 11.  
Chairs for Telephonists and  
Telegraphists (Sch. 2.6348). July  
25.  
P.V.C. Insulated Line Wire  
(Sch. C.6346). July 20.  
Plugs and Sockets, for Broad-  
casting (Sch. C.6328). July 20.  
Switchboards, Cordless (Sch.  
C.6380). Aug. 17.

#### DEPARTMENT OF SUPPLY AND DEVELOPMENT.

Cotton Duck, White. July 11.  
Cramp Folder and Bending Ma-  
chine. July 11.  
Doors. July 7.  
Gear Generating Machine. July  
13.  
Hack-sawing Machine, 10 inch  
capacity. July 11.

### NEW SOUTH WALES

GOVERNMENT RAILWAYS  
DEPARTMENT.  
Compressed Cork Sheets. July  
12.

Corks. July 12.  
Electric Overhead Travelling  
Crane (75 ton). (Spec. 504). Sept.  
20.  
Lathe, 12 inch centre (Quot.  
CE-8212). July 31.  
Miscellaneous Electrical Fit-  
tings. July 12.  
Respirators. July 12.  
Rope, Twine and Cordages.  
July 12.  
Rubber Tyres. July 12.  
Tramway Trolley Cord. July 12.

#### DEPARTMENT OF MAIN ROADS.

Augers and Hydraulic Jacks.  
July 11.  
Bar Mat. July 6.  
Plywood. July 6.  
Protection Angles. July 11.  
Tyre Chains. July 6.

#### MISCELLANEOUS.

Items of Plant—50/60 h.p.  
Diesel Tractor, with bulldozer  
blade and overhead loader;  
Ripper; 4/5 ton Petrol Grader,  
self-propelled; Mobile Tar Spray-  
ing Unit and two (2) ton mobile  
portable Crane, for City of  
Orange. July 17.

### SPECIAL NOTICE TO READERS

To receive prompt attention,  
address all inquiries to Box  
1887, G.P.O., Sydney.

Lawn Mower, power driven, 4-  
stroke motor, and 18 inch cut, for  
Municipality of Tenterfield. July  
20.

Plant—Compressor Tractor, of  
approx. 100 C.F.M. cap., working  
pressure approx. 100 lb. per sq.  
inch, pneumatic tyred and Trac-  
tor Drawn Road Broom, for Shire  
of Wollondilly. July 19.  
Regulating Valves (37), for  
pipe lines and reservoir control,  
for Central Tablelands County  
Council. July 24.

### VICTORIA

#### GOVERNMENT RAILWAYS DEPARTMENT.

Control Equipment. August 9.  
Pneumatic Concrete Vibrators.  
Aug. 9.  
Portable Concrete Mixers. Aug.  
9.  
Sectional Water Tanks and  
Towers. July 26.  
Switches and Bus-Bar Support-  
ing Insulators. Aug. 2.  
Switchgear, 2,200 volt. July 26.  
Welding Generators and Machi-  
nery, Second-hand, Purchase of.  
July 12.

### TASMANIA

#### HYDRO ELECTRIC COM- MISSION.

Plant and Equipment—Con-  
veyor Belt Idlers and Equipment;

Conveyor Belts; Vibrating Screens  
and Electric Motor Driven Con-  
crete Pump. July 26.

#### MISCELLANEOUS.

Tractors and Angledozer, with  
Twin Power Control Units, for  
City of Launceston. July 17.

### DEPARTMENT OF RAILWAYS— NEW SOUTH WALES.

TENDERS enclosed in sealed  
envelopes which must be endorsed  
"TENDER FOR . . .", addressed  
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Street, Sydney, or posted to the  
above address.

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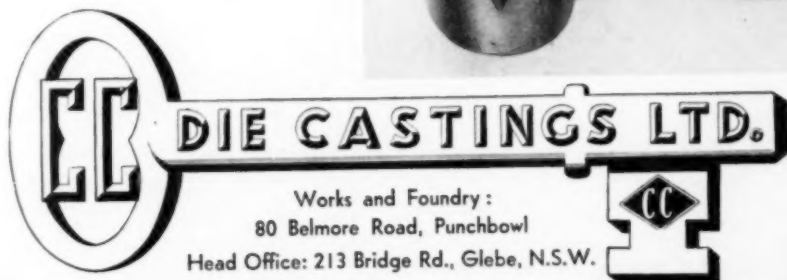
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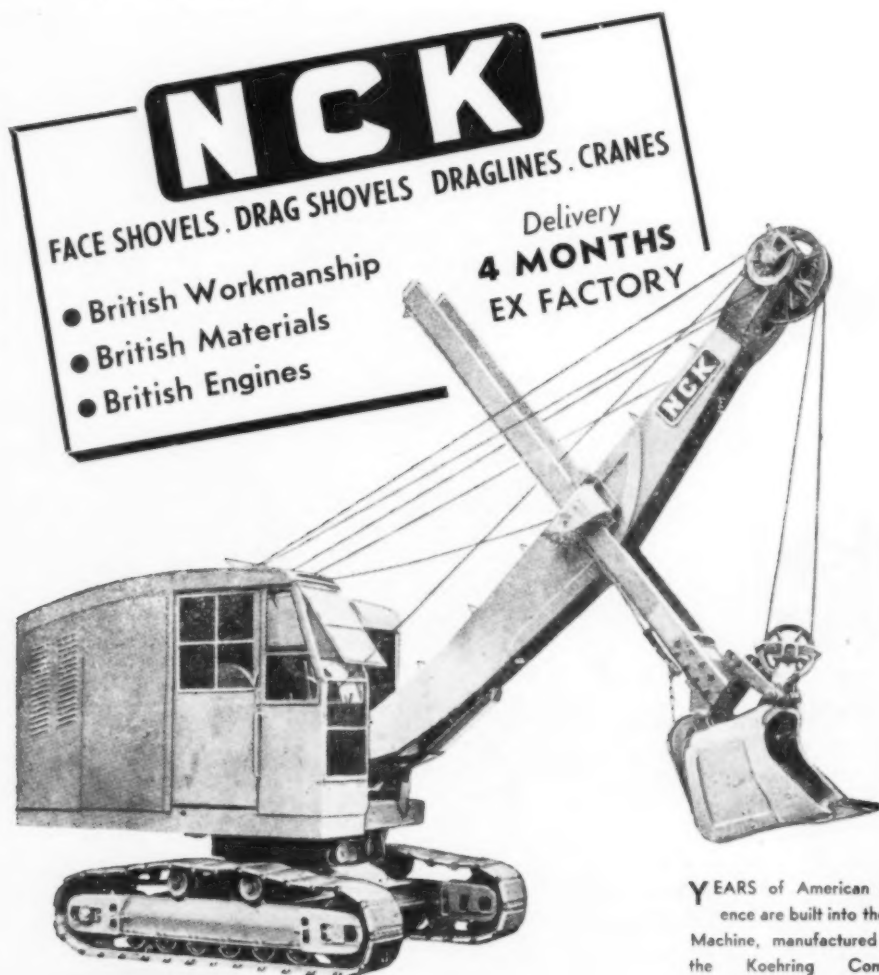


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